

**TECHNICAL MANUAL
FOR
COFFEE BREWER, BUNN-O-MATIC,
MODELS C, CS, CRT, CRTF, CT, CTF, CW, CWTF,
SINGLE CW AND SINGLE CWF
INSTALLATION, OPERATION, AND
MAINTENANCE**

SUPERSEDURE NOTICE: THIS MANUAL SUPERSEDES AND CANCELS S6163-AK-FSE-010, REV 1, DATED 30 SEPTEMBER 2008, AND ALL CHANGES THERETO.

DISTRIBUTION STATEMENT B: DISTRIBUTION AUTHORIZED TO U. S. GOVERNMENT AGENCIES ONLY, ADMINISTRATIVE OR OPERATIONAL USE, 31 AUGUST 2010. OTHER REQUESTS FOR THIS DOCUMENT SHALL BE REFERRED TO NSWC, PHILADELPHIA CODE 944.

WARNING: THIS DOCUMENT CONTAINS TECHNICAL DATA WHOSE EXPORT IS RESTRICTED BY THE ARMS EXPORT CONTROL ACT (TITLE 22, U.S.C., SEC. 2751 ET. SEQ.) OR THE EXPORT ADMINISTRATIONS ACT OF 1979, AS AMENDED, TITLE 50, U.S.C., APP 2401, ET SEQ. VIOLATIONS OF THESE EXPORT LAWS ARE SUBJECT TO SEVERE CRIMINAL PENALTIES. DISSEMINATE IN ACCORDANCE WITH PROVISIONS OF DOD DIRECTIVE 5230.25(D).

DESTRUCTION NOTICE: DESTROY BY ANY METHOD THAT WILL PREVENT DISCLOSURE OF CONTENTS OR RECONSTRUCTION OF THE DOCUMENT.

PUBLISHED BY DIRECTION OF COMMANDER, NAVAL SEA SYSTEMS COMMAND



**TECHNICAL MANUAL
FOR
COFFEE BREWER, BUNN-O-MATIC,
MODELS C, CS, CRT, CRTF, CT, CTF, CW, CWTF,
SINGLE CW AND SINGLE CWF
INSTALLATION, OPERATION, AND
MAINTENANCE**

SUPERSEDURE NOTICE: THIS MANUAL SUPERSEDES AND CANCELS S6163-AK-FSE-010, REV 1, DATED 30 SEPTEMBER 2008, AND ALL CHANGES THERETO.

DISTRIBUTION STATEMENT B: DISTRIBUTION AUTHORIZED TO U. S. GOVERNMENT AGENCIES ONLY, ADMINISTRATIVE OR OPERATIONAL USE, 31 AUGUST 2010. OTHER REQUESTS FOR THIS DOCUMENT SHALL BE REFERRED TO NSWC, PHILADELPHIA CODE 944.

WARNING: THIS DOCUMENT CONTAINS TECHNICAL DATA WHOSE EXPORT IS RESTRICTED BY THE ARMS EXPORT CONTROL ACT (TITLE 22, U.S.C., SEC. 2751 ET. SEQ.) OR THE EXPORT ADMINISTRATIONS ACT OF 1979, AS AMENDED, TITLE 50, U.S.C., APP 2401, ET SEQ. VIOLATIONS OF THESE EXPORT LAWS ARE SUBJECT TO SEVERE CRIMINAL PENALTIES. DISSEMINATE IN ACCORDANCE WITH PROVISIONS OF DOD DIRECTIVE 5230.25(D).

DESTRUCTION NOTICE: DESTROY BY ANY METHOD THAT WILL PREVENT DISCLOSURE OF CONTENTS OR RECONSTRUCTION OF THE DOCUMENT.

IDENTIFYING TECHNICAL PUBLICATION SHEET FOR COMMERCIAL MANUAL

This manual supersedes S6163-AK-FSE-010, Rev 1, dated 30 September 2008, and all changes thereto.

1. PURPOSE: This technical publication sheet is issued for the purpose of identifying and authorizing the following commercial manual for Navy use.

Manufacturer: Bunn-O-Matic Corporation
Post Office Box 3227
Springfield, IL 62708-3227
Cage 25628

Purchase Order or Contract No.: N00024-09-C-2107

Requisition No.: N/A

Equipment: Coffee Brewer, Bunn-O-Matic

National Stock Number: 0910-LP-110-4363

Title: Coffee brewer, Bunn-O-Matic, Models C, CS, CRT, CRTF, CT, CTF, CW, CWTF, Single CW and Single CWF; Installation, Operation, and Maintenance

Additional Identification: N/A

Date: N/A

2. ADDITIONAL COPIES: Additional copies are available from the Naval Logistics Library (NLL).

3. FILE LOCATION: The above-described commercial manual is filed in _____.

4. AUTHORITY NOTICE AND DISTRIBUTION STATEMENT:

Published by direction of Commander, Naval Sea Systems Command.

Distribution Statement B: Distribution authorized to U.S. Government Agencies only, administrative or operational use, 31 August 2010. Other requests for this document shall be referred to NSWC, Philadelphia Code 944.

FOR UNCLASSIFIED MANUALS

NOTICE: Reproduction for non-military use of the information or illustration in this publication is not permitted. The policy for military use reproduction is established in OPNAVINST 5510.1B.

This material may be reproduced by or for the U.S. Government pursuant to the rights acquired under Article 42 of Newport News Shipbuilding Purchase Order DoD Contracts Appendix A dated December 2009.

This document contains copyright or proprietary materials. Infringement of copyright or proprietary material may violate existing Federal laws and statutes and result in criminal penalties, imprisonment, or removal from office.

TABLE OF CONTENTS

PART	TITLE
I	Installation and Operating Guide
II	Service and Repair Manual
III	Illustrated Parts Catalog

PART I

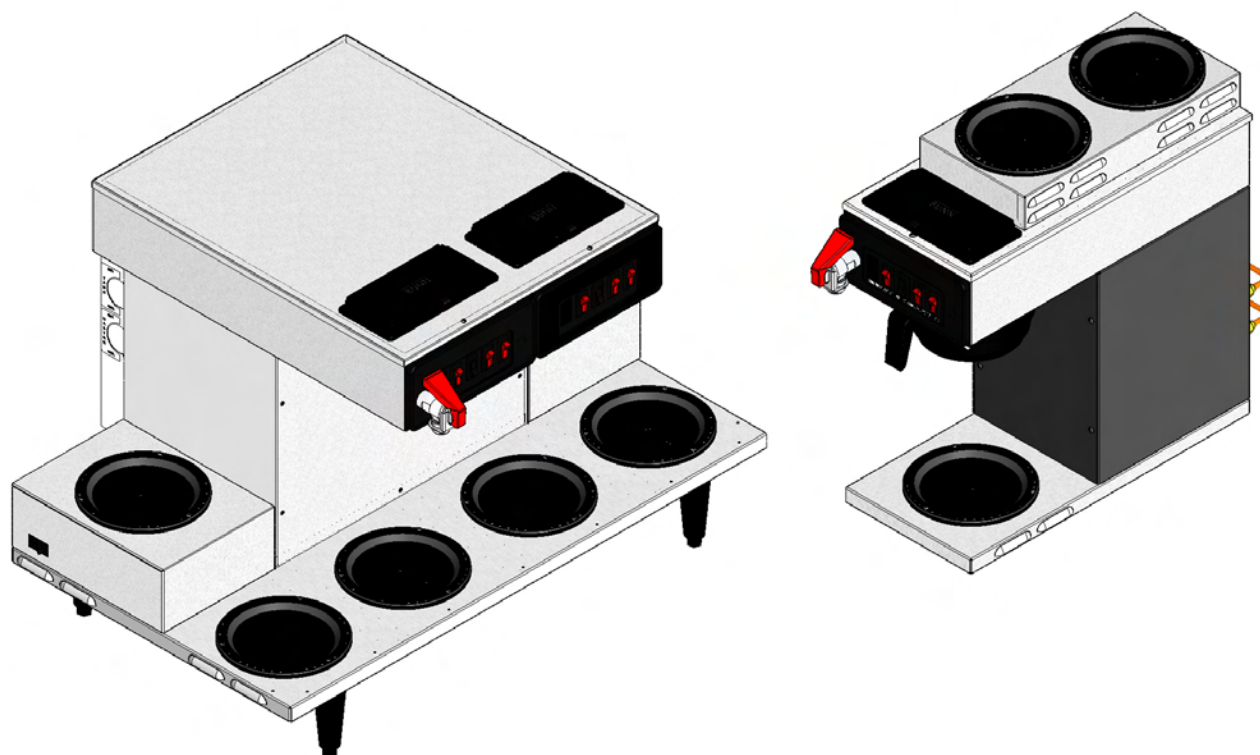
Installation and Operating Guide

BUNN®

C, CT, CWTF Series

Including DV, APS/TC/TS, Single CW & Twins

*Supersedes Operating Manuals:
10690.####; 10737.####; 10841.0000;
28182.0000; 36102.0000*



INSTALLATION & OPERATING GUIDE

BUNN-O-MATIC CORPORATION

POST OFFICE BOX 3227

SPRINGFIELD, ILLINOIS 62708-3227

PHONE: (217) 529-6601 FAX: (217) 529-6644

To ensure you have the latest revision of the Operating Manual, or to view the Illustrated Parts Catalog, Programming Manual, or Service Manual, please visit the Bunn-O-Matic website, at www.bunn.com. This is absolutely FREE, and the quickest way to obtain the latest catalog and manual updates. For Technical Service, contact Bunn-O-Matic Corporation at 1-800-286-6070.



BUNN-O-MATIC COMMERCIAL PRODUCT WARRANTY

Bunn-O-Matic Corp. ("BUNN") warrants equipment manufactured by it as follows:

- 1) All equipment other than as specified below: 2 years parts and 1 year labor.
- 2) Electronic circuit and/or control boards: parts and labor for 3 years.
- 3) Compressors on refrigeration equipment: 5 years parts and 1 year labor.
- 4) Grinding burrs on coffee grinding equipment to grind coffee to meet original factory screen sieve analysis: parts and labor for 3 years or 30,000 pounds of coffee, whichever comes first.

These warranty periods run from the date of installation BUNN warrants that the equipment manufactured by it will be commercially free of defects in material and workmanship existing at the time of manufacture and appearing within the applicable warranty period. This warranty does not apply to any equipment, component or part that was not manufactured by BUNN or that, in BUNN's judgment, has been affected by misuse, neglect, alteration, improper installation or operation, improper maintenance or repair, damage or casualty. This warranty is conditioned on the Buyer 1) giving BUNN prompt notice of any claim to be made under this warranty by telephone at (217) 529-6601 or by writing to Post Office Box 3227, Springfield, Illinois 62708-3227; 2) if requested by BUNN, shipping the defective equipment prepaid to an authorized BUNN service location; and 3) receiving prior authorization from BUNN that the defective equipment is under warranty.

THE FOREGOING WARRANTY IS EXCLUSIVE AND IS IN LIEU OF ANY OTHER WARRANTY, WRITTEN OR ORAL, EXPRESS OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, ANY IMPLIED WARRANTY OF EITHER MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. The agents, dealers or employees of BUNN are not authorized to make modifications to this warranty or to make additional warranties that are binding on BUNN. Accordingly, statements by such individuals, whether oral or written, do not constitute warranties and should not be relied upon.

If BUNN determines in its sole discretion that the equipment does not conform to the warranty, BUNN, at its exclusive option while the equipment is under warranty, shall either 1) provide at no charge replacement parts and/or labor (during the applicable parts and labor warranty periods specified above) to repair the defective components, provided that this repair is done by a BUNN Authorized Service Representative; or 2) shall replace the equipment or refund the purchase price for the equipment.

THE BUYER'S REMEDY AGAINST BUNN FOR THE BREACH OF ANY OBLIGATION ARISING OUT OF THE SALE OF THIS EQUIPMENT, WHETHER DERIVED FROM WARRANTY OR OTHERWISE, SHALL BE LIMITED, AT BUNN'S SOLE OPTION AS SPECIFIED HEREIN, TO REPAIR, REPLACEMENT OR REFUND.

In no event shall BUNN be liable for any other damage or loss, including, but not limited to, lost profits, lost sales, loss of use of equipment, claims of Buyer's customers, cost of capital, cost of down time, cost of substitute equipment, facilities or services, or any other special, incidental or consequential damages.

BrewWISE, BrewLOGIC, BrewWIZARD, BUNN Gourmet Ice, BUNN Pour-O-Matic, BUNN, Bunn-OMatic, Bunn-O-Matic, BUNNlink, BUNNserve, BUNN Espresso, DBC, Dr. Brew, Dual, EasyClear, EasyGard, Easy Pour, FlavorGard, Gourmet Ice, Gourmet Juice, High Intensity, IMIX, Infusion Series, Quality Beverage Equipment Worldwide, The Mark of Quality in Beverage Equipment Worldwide, My Café, PowerLogic, Safety-Fresh, Scale-Pro, Single, Smart Funnel, Smart Hopper, SmartWAVE, Soft Heat, SplashGard, System III, ThermoFresh, 392, AutoPOD, AXIOM, Beverage Profit Calculator, Beverage Bar Creator, BrewMETER, BUNNSERVE, BUNNsource, Coffee At Its Best, Cool Froth, Digital Brewer Control, Intellisteam, Nothing Brews Like a BUNN, Pouring Profits, Pulse Wave, Signature Series, Silver Series, Smart Heat, Tea At Its Best, The Horizontal Red Line, Titan, Ultra, are either trademarks or registered trademarks of Bunn-O-Matic Corporation.

INTRODUCTION

This equipment will brew one or two half-gallon batches of coffee simultaneously into awaiting dispensers (with just the press of a button). One side may include a hot water faucet for allied beverage use. It is only for indoor use on a sturdy counter.

USER NOTICES	4
ELECTRICAL REQUIREMENTS.....	5
PLUMBING REQUIREMENTS (CURRENT SINGLES).....	6
PLUMBING REQUIREMENTS (CURRENT TWINS)	7
PLUMBING REQUIREMENTS (EARLY SINGLES)	8
PLUMBING REQUIREMENTS (EARLY TWINS).....	9
INITIAL SET-UP.....	10
ADJUSTING BREW VOLUMES	11
OPERATING CONTROLS	12
BREWING	14
CLEANING	15
TROUBLESHOOTING	12

Explanation of codes:

15 - All components in machine are rated for 120 Volts ac, (15 Amps)

20 - All components in machine are rated for 120 Volts ac, (20 Amps)

35 (120/240V) - Tank heater rated for 240 volts ac, all other components rated for 120 volts ac (20 Amps)

DV - Dual Voltage. 2 tank heaters with toggle switch

MV - Multi Voltage. 2 tank heaters with terminal block. (Replaced by DV)

A - All components in machine are rated for 240 volts ac.

B - All components are rated for either 100 volts ac, or 200 volts ac.

C - Canadian models only

CE - European models only.

TWIN - 2 brewers in 1 chassis.

APS - Airpot Server (No warmers)

TC - Thermal Carafe (No warmers)

TS - Thermal Server (No warmers)

USER NOTICES

Carefully read and follow all notices in this manual and on the equipment. All labels on the equipment should be kept in good condition. Replace any unreadable or damaged labels.

This equipment must be installed to comply with the International Plumbing Code or the International Code Council and the Food Code Manual of the Food and Drug Administration (FDA). For models installed outside the U.S.A., comply with the applicable Plumbing /Sanitation Code.

#00656.0000



#03408.0002



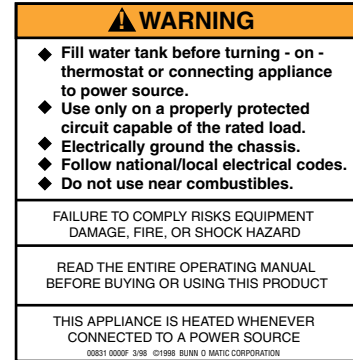
#03409.0002



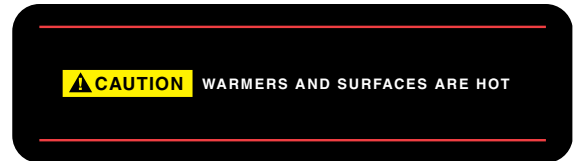
#00658.0000



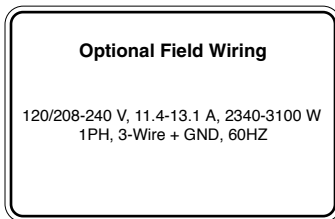
#37881.0000



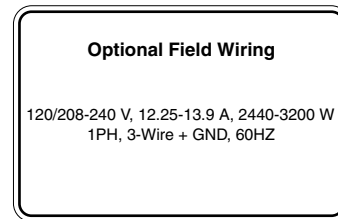
#00831.0000



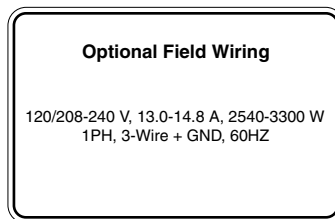
#02765.0000



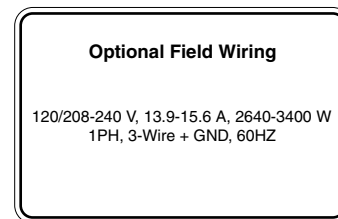
#34955.0000
APS MODELS



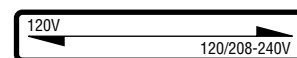
#34955.0001
ONE WARMER MODELS



#34955.0002
TWO WARMER BREWERS



#34955.0003
THREE WARMER BREWERS



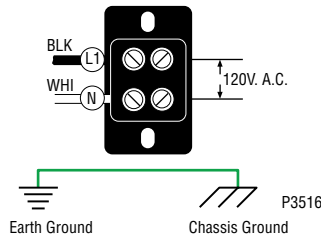
#12364.0000

#34056.0000
VOLTAGE SELECTOR SWITCH

ELECTRICAL REQUIREMENTS

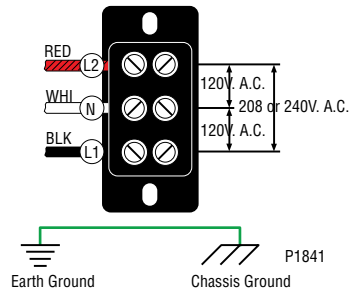
CAUTION - The brewer must be disconnected from the power source until specified in *Initial Set-Up*.

Model 15 has an attached cordset and requires 2-wire grounded service rated 120 volts ac, 15 amp, single phase, 60 Hz.



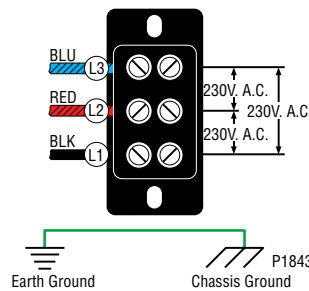
Model 20

Requires 2-wire, grounded service rated 120 volts ac, 20 amp, single phase, 60 Hz. Proceed as follows:



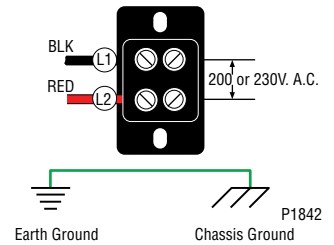
Model 35

Note: This electrical service consists of 3 current carrying conductors (Neutral, L1 and L2) and a separate conductor for earth ground.



230V ac 3 phase models

Note: This electrical service consists of 3 current carrying conductors (L1, L2 and L3) and a separate conductor for earth ground.



200 or 230V ac single phase models

Note: This electrical service consists of 2 current carrying conductors (L1 and L2) and a separate conductor for earth ground.

NOTE: Some Twins require two individual power cords.

CE REQUIREMENTS:

- This appliance must be installed in locations where it can be overseen by trained personnel.
- For proper operation, this appliance must be installed where the temperature is between 10°C to 30°C.
- Appliance shall not be tilted more than 10° for safe operation.
- An electrician must provide electrical service as specified in conformance with all local and national codes.
- This appliance must not be cleaned by water jet.
- This appliance is not intended for use by persons (including children) with reduced physical, sensory or mental capabilities, or lack of experience and knowledge, unless they have been given instructions concerning use of this appliance by a person responsible for its safety.

ELECTRICAL HOOK-UP

CAUTION – Improper electrical installation will damage electronic components.

1. An electrician must provide electrical service as specified.
2. Using a voltmeter, check the voltage and color coding of each conductor at the electrical source.
3. Place the heater switch(es) at the rear of the brewer in the "OFF" lower position.
4. Remove the front panel beneath the sprayheads. (On Dual Volt models, place the voltage select toggle switch to the corresponding voltage position being used. FIG 5-1).
5. Feed the cord through the strain relief(s) and connect it to the terminal block(s).
6. Connect the brewer to the power source and verify the voltage at the terminal block before proceeding. Replace the front panel.
7. If plumbing is to be hooked up later be sure the brewer is disconnected from the power source. If plumbing has been hooked up, the brewer is ready for *Initial Set-Up*.

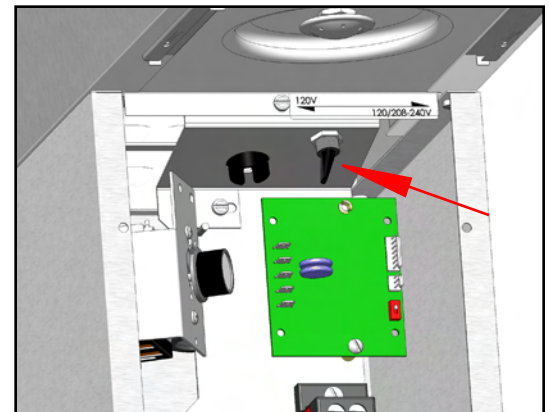


FIG. 5-1 Dual Volt Switch Position

PLUMBING REQUIREMENTS-CURRENT SINGLES

This equipment must be installed to comply with the International Plumbing Code of the International Code Council and the Food Code Manual of the Food and Drug Administration (FDA). For models installed outside the U.S.A., comply with the applicable Plumbing /Sanitation Code.

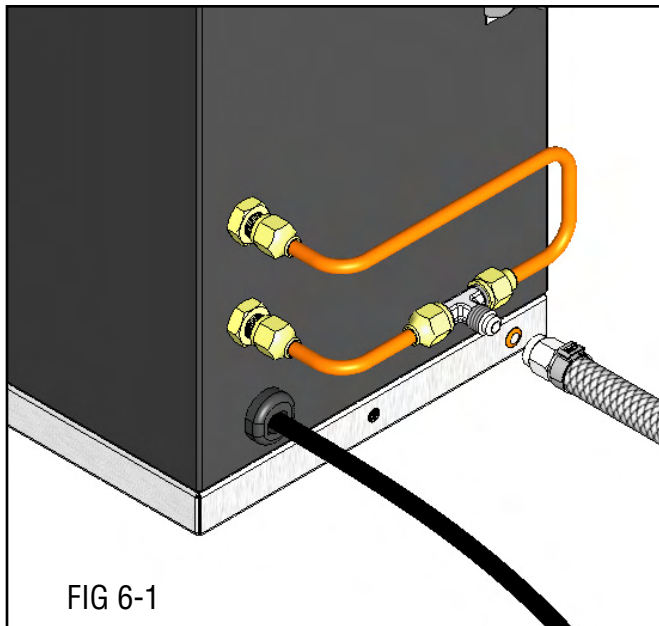
MODEL C:

This model is completely portable and requires no attached plumbing.

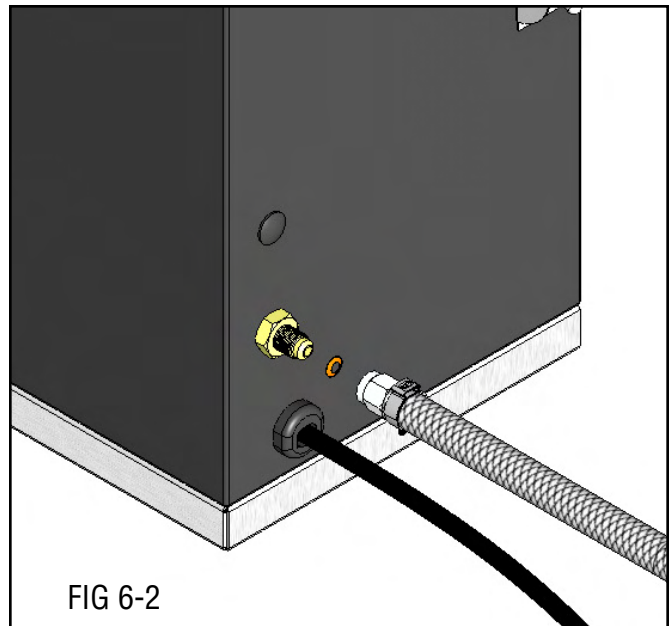
MODELS CT, CTF, CWT, CWTA, CWTB, CWTF, CWTFA & CWTFB, SINGLE CW & SINGLE CWF

These brewers must be connected to a cold water system with operating pressure between 20 and 90 psi (138 to 620kPa) from a ½" or larger supply line. A shut-off valve should be installed in the line before the brewer. Install a regulator in the line when pressure is greater than 90 psi (620kPa) to reduce it to 50 psi (345kPa). The water inlet fitting is ¼" flare.

NOTE - Bunn-O-Matic recommends ¼" copper tubing for installations of less than 25 feet and ⅜" for more than 25 feet from the ½" water supply line. A tight coil of tubing in the water line will facilitate moving the brewer to clean the countertop. Bunn-O-Matic does not recommend the use of a saddle valve to install the brewer. The size and shape of the hole made in the supply line by this type of device may restrict water flow.



Models CTF & CWTF



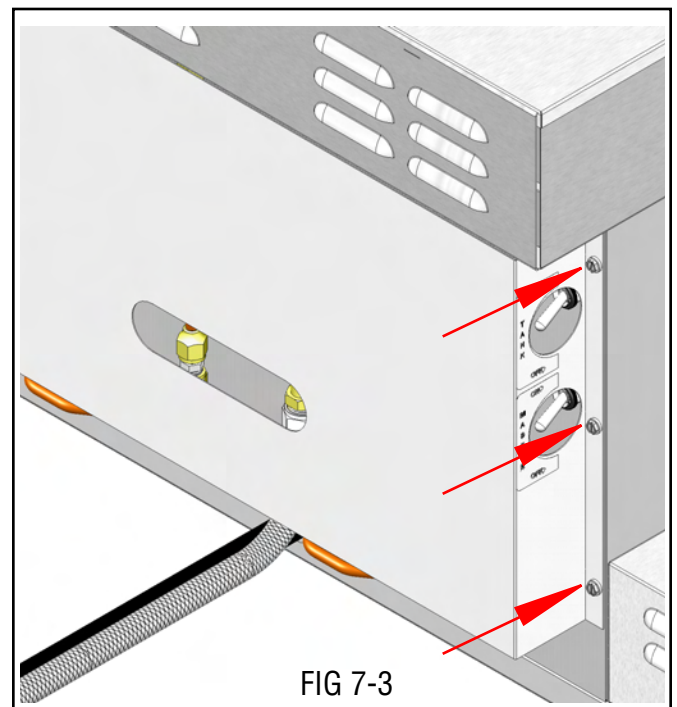
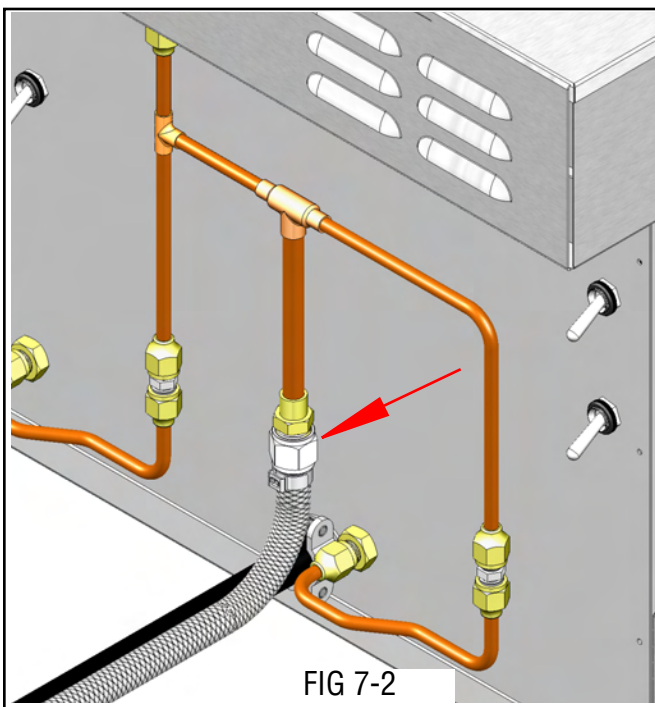
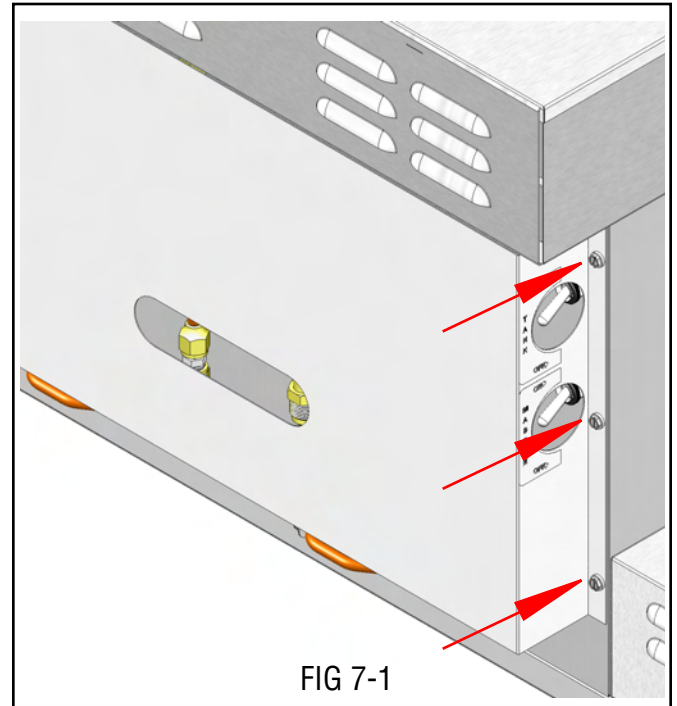
Models CT & CWT

PLUMBING REQUIREMENTS-CURRENT TWINS

TWINS

These brewers must be connected to a cold water system with operating pressure between 20 and 90 psi (138 and 620 kPa) from a ½" or larger supply line. A shut-off valve should be installed in the line before the brewer. Install a regulator in the line when pressure is greater than 90 psi (620 kPa) to reduce it to 50 psi (345 kPa). The water inlet fitting is ⅜" flare.

1. Remove six screws securing rear utility cover (if equipped). FIG 7-1
2. Remove cap from the flared fitting on the bottom of the center tube assembly.
3. Flush the water line and securely attach it to the flare fitting on the center tube assembly. FIG 7-2
4. Turn on the water supply.
5. Re-install rear utility cover. FIG 7-3
6. On models with faucet, place an empty vessel beneath the faucet and lift the handle until water is dispensed.



PLUMBING REQUIREMENTS-EARLY SINGLES

This equipment must be installed to comply with the International Plumbing Code of the International Code Council and the Food Code Manual of the Food and Drug Administration (FDA). For models installed outside the U.S.A., comply with the applicable Plumbing /Sanitation Code.

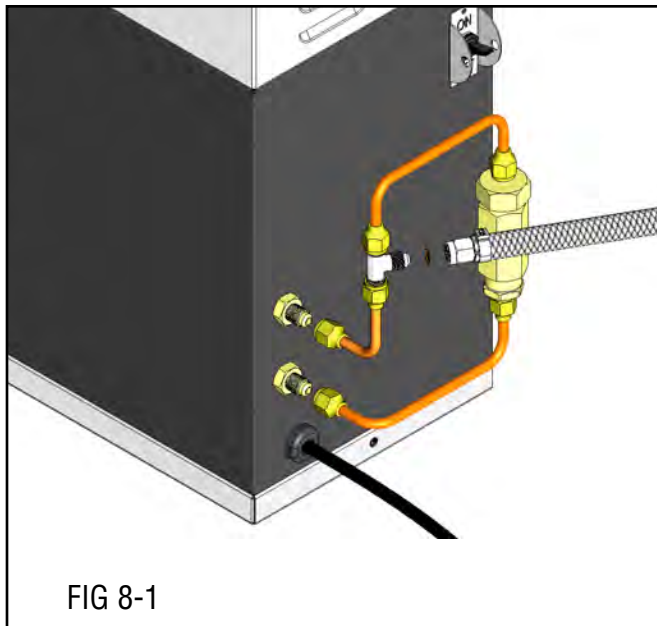
MODEL C:

This model is completely portable and requires no attached plumbing.

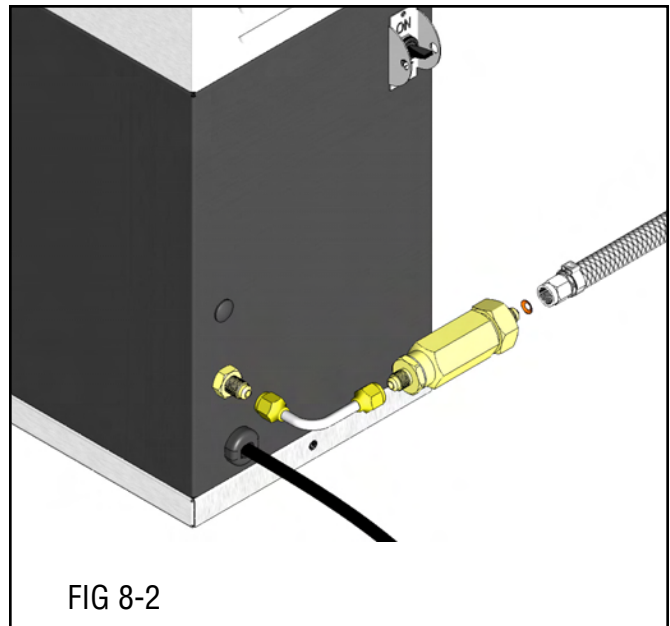
MODELS CT, CTF, CWT, CWTA, CWTB, CWTf, CWTFA & CWTfB, SINGLE CW & SINGLE CWF

These brewers must be connected to a cold water system with operating pressure between 20 and 90 psi (138 to 620kPa) from a ½" or larger supply line. A shut-off valve should be installed in the line before the brewer. Install a regulator in the line when pressure is greater than 90 psi (620kPa) to reduce it to 50 psi (345kPa). The water inlet fitting is ¼" flare.

NOTE - Bunn-O-Matic recommends ¼" copper tubing for installations of less than 25 feet and ⅜" for more than 25 feet from the ½" water supply line. A tight coil of tubing in the water line will facilitate moving the brewer to clean the countertop. Bunn-O-Matic does not recommend the use of a saddle valve to install the brewer. The size and shape of the hole made in the supply line by this type of device may restrict water flow.



Models CTF & CWTf



Models CT & CWT

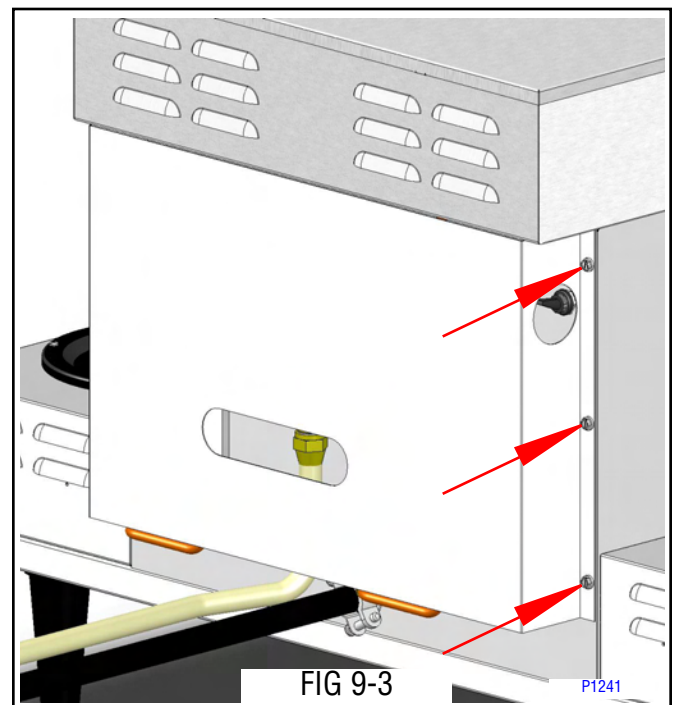
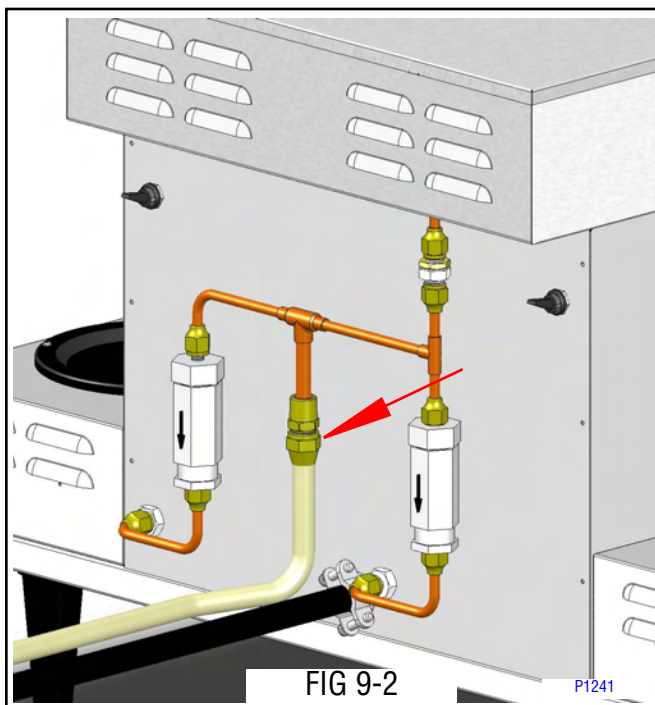
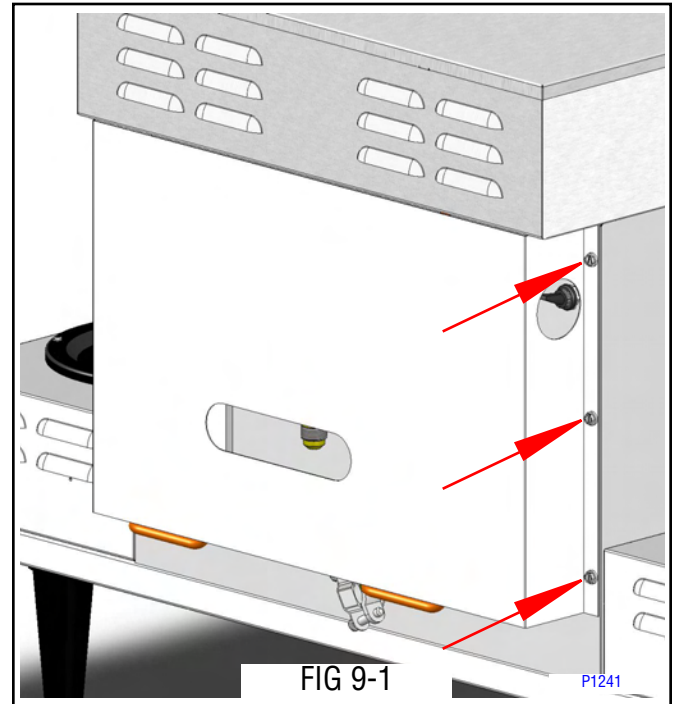
PLUMBING REQUIREMENTS-EARLY TWINS

TWINS

These brewers must be connected to a cold water system with operating pressure between 20 and 90 psi (138 and 620 kPa) from a ½" or larger supply line. A shut-off valve should be installed in the line before the brewer. Install a regulator in the line when pressure is greater than 90 psi (620 kPa) to reduce it to 50 psi (345 kPa) . The water inlet fitting is ⅜" flare.

TWINS

1. Remove six screws securing rear utility cover (if equipped). FIG 9-1
2. Remove cap from the flared fitting on the bottom of the center tube assembly.
3. Flush the water line and securely attach it to the flare fitting on the center tube assembly. FIG 9-2
4. Turn on the water supply.
5. Re-install rear utility cover. FIG 9-3
6. On models with faucet, place an empty vessel beneath the faucet and lift the handle until water is dispensed.



INITIAL SET-UP

CAUTION - The brewer must be disconnected from the power source throughout the initial set-up, except when specified in the instructions.

1. Insert an empty funnel into the funnel rails.
2. Place an empty dispenser under the funnel.
3. Place the heater switch at the rear of the brewer in the "OFF" lower position and connect the brewer to the power source.
4. Fill the tank with water as directed:

4A. Model C

Pour three pitchers of tap water into the screened area on top of the brewer. Allow approximately two minutes between pitchers for water to flow into the tank. While the third pitcher of water is entering the tank, the tank will fill to capacity and the excess will flow from the sprayhead, out of the funnel, and into the dispenser.

4B. Models CT, CTF, CWT, CWTA, CWTB, CWTF, CWTFA, CWTFB, SINGLE CW & SINGLE CWF

Connect the brewer to the power source, place the "ON/OFF" switch in the "ON" upper position, and momentarily press and release the start switch. Water will begin flowing into the tank. When water stops flowing into the tank, initiate a second and a third brew cycle. During the third brew cycle the tank will fill to its capacity and the excess will flow from the sprayhead, out of the funnel, and into the dispenser.

5. When the flow of water from the funnel stops, place the heater switch at the rear of the brewer in the "ON" upper position and wait approximately twenty minutes for the water in the tank to heat to the proper temperature. Some water will drip from the funnel during this time; this is due to expansion and should not occur thereafter.
6. Empty the dispenser and initiate another brew cycle as directed:

6A. Model C

Pour one pitcher of tap water into the screened area on top of the brewer.

6B. Models CT, CTF, CWT, CWTA, CWTB, CWTF, CWTFA, CWTFB, SINGLE CW & SINGLE CWF

Place the "ON/OFF" switch in the "ON" upper position, and on models SINGLE CW and SINGLE CWF place the batch selector switch in the "1 GAL" position. Momentarily press and release the start switch.

7. Place the "ON/OFF" switch in the lower "OFF" position after water has stopped flowing from the funnel, and let the water in the tank reheat to the proper temperature.
8. Empty the dispenser; place the "ON/OFF" switch in the "ON" upper position, and momentarily press and release the start switch. Check the water volume in the dispenser after water has stopped flowing from the funnel. It should be 64 ounces for all models except SINGLE CW and SINGLE CWF should be 128 ounces.
9. Models SINGLE CW and SINGLE CWF only, place the batch selector switch in the "1/2 GAL" position, and momentarily press and release the start switch. Check the water volume in the dispenser after water has stopped flowing from the funnel. It should be 64 ounces.
10. If water volumes are not correct, adjust the brew timer as required. See *Adjusting Brew Volumes*. Allow the water to reheat. Start, and measure another brew cycle.
11. Repeat step 10 until correct water volume is achieved.

NOTE: For all Twins, repeat steps 1 through 10 for the other side.

12. The brewer is now ready for use in accordance with the coffee brewing instructions.

ADJUSTING BREW VOLUMES

CAUTION - Disconnect the power source from the brewer prior to the removal of any panel for the replacement or adjustment of any component.

NOTE: Prior to setting or modifying batch sizes, check that the brewer is connected to water supply, the tank is properly filled, and a funnel and server are in place.

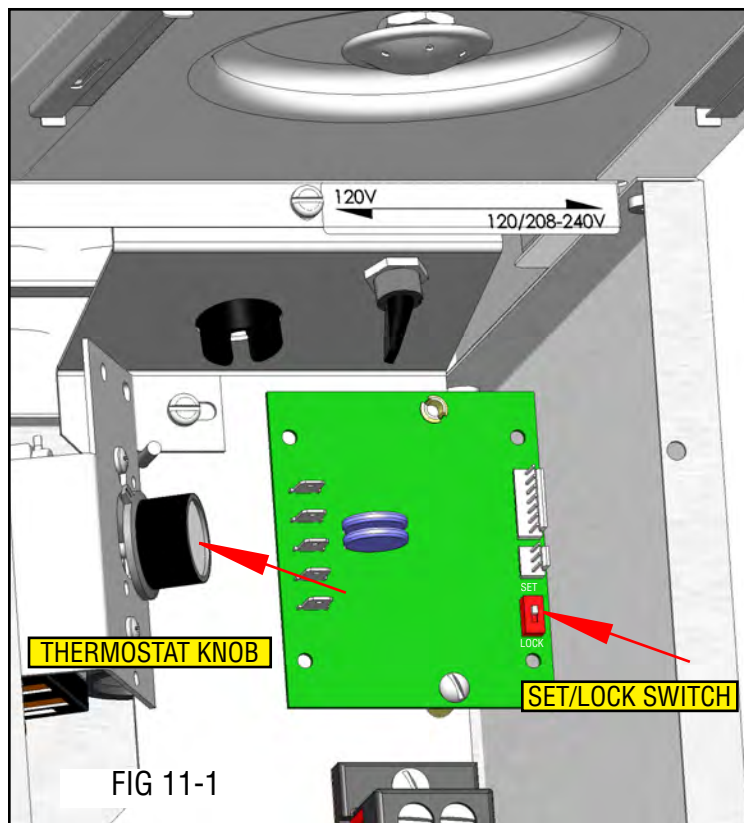
1. **Modifying batch sizes.** To modify a batch volume, first check that the SET/LOCK switch is in the "SET" position on the circuit board.

To increase a batch size. Press and hold the START or BREW switch until three clicks are heard. Release the switch (Failure to release the switch within two seconds after the third click causes the volume setting to be aborted and previous volume setting will remain in memory) and press it again one or more times. Each time the switch is pressed, two seconds are added to the brew time period. Allow the brew cycle to finish in order to verify that the desired volume has been achieved.

To decrease a batch size. Press and release the START or BREW switch once for every two-second interval to be removed from the total brew time period; then immediately press and hold down the START or BREW switch until three clicks are heard. Release the switch. (Failure to release the switch within two seconds after the third click causes the volume setting to be aborted and previous volume setting will remain in memory). Allow the brew cycle to finish in order to verify that the desired volume has been achieved.

THERMOSTAT

In most locations the thermostat should be turned to the full clockwise position (200° F) for optimum brewing temperature. In areas of high altitude you may have to turn it down (counterclockwise) to prevent boiling.



NOTICE

Brew water temperature is factory set at 200° F (93.3° C). Areas of high altitude will require lowering this temperature to prevent boiling. This chart should be used as a guide when readjusting the brew water temperature.

Altitude (Feet)	Boiling point of water		Recommended water temperature	
	° F	° C	° F	° C
-1000	213.8	101.0	200	93.3
-500	212.9	100.5	200	93.3
0	212.0	100.0	200	93.3
500	211.1	99.5	200	93.3
1000	210.2	99.0	200	93.3
1500	209.3	98.5	200	93.3
2000	208.4	98.0	200	93.3
2500	207.4	97.4	200	93.3
3000	206.5	96.9	199	92.8
3500	205.6	96.4	198	92.2
4000	204.7	95.9	197	91.7
4500	203.8	95.4	196	91.1
5000	202.9	94.9	195	90.6
5500	201.9	94.4	195	90.6
6000	201.0	93.9	194	90.0
6500	200.1	93.4	193	89.4
7000	199.2	92.9	192	88.9
7500	198.3	92.4	191	88.3
8000	197.4	91.9	190	87.8
8500	196.5	91.4	189	87.2
9000	195.5	90.8	188	86.7
9500	194.6	90.3	187	86.1
10000	193.7	89.8	186	85.6

OPERATING CONTROLS

ON/LOWER SWITCH

Placing the "ON/LOWER" switch in the "OFF" (lower) position stops brewing. Stopping a brew cycle after it has been started, will not stop the flow of water into the funnel until the tank siphons down to its proper level. Placing the switch in the "ON" (upper) position enables the brew circuit and on all (*except* APS/TC models) supplies power to the brew station warmer.

START SWITCH

Momentarily pressing and releasing the switch starts a brew cycle. **DO NOT HOLD START SWITCH.**

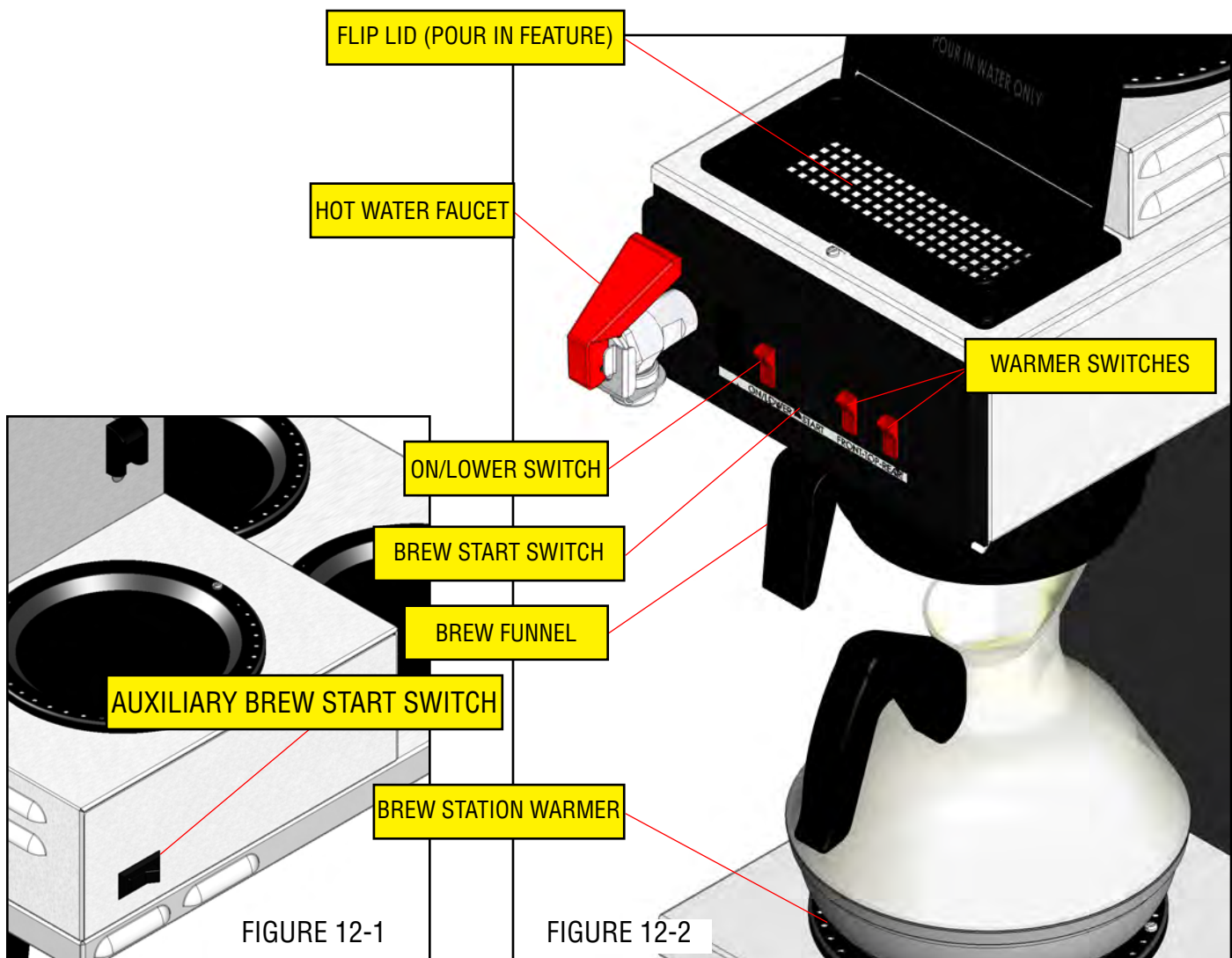
NOTE – The "ON/OFF" switch must be in the "ON" upper position to initiate and complete a brew cycle.

NOTE – Some TWINS are equipped with auxiliary brew start switches on each side of brewer. Use care not to place other items too close to start switches so they don't block or accidentally start a brew cycle! FIG 11-1

FLIP LID (POUR IN FEATURE)

Place server under brew funnel. Open flip lid to pour in (water only). **DO NOT POUR IN COFFEE!**

WARNING: DO NOT USE THE POUR IN FEATURE AND START SWITCH SIMULTANEOUSLY, OVER FLOWING OF HOT WATER WILL OCCUR!



OPERATING CONTROLS

MASTER ON/OFF SWITCH(S)

The master ON/OFF switch disables power the entire brewer (including tank heaters).

NOTE – TWINS with 2 power cords will have 2 power switches, (one left, one right).

TANK HEATER ON/OFF SWITCH(S)

The tank heater ON/OFF switch disables power to the tank heater circuits only. Power to brew timer and warmer circuits are not affected. All Twins have 2 tank heater switches. **NOTE:** Leaving the tank heater switch(s) off will result in brewing with cold water.

LATE MODEL SWITCHS

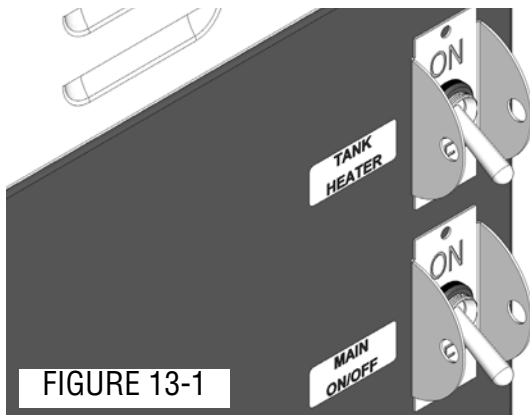


FIGURE 13-1

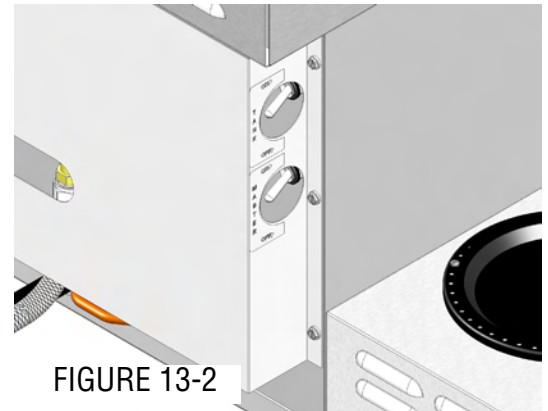


FIGURE 13-2

EARLY MODEL SWITCHS

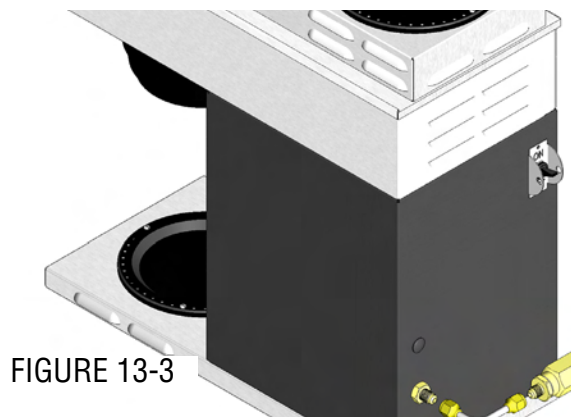


FIGURE 13-3

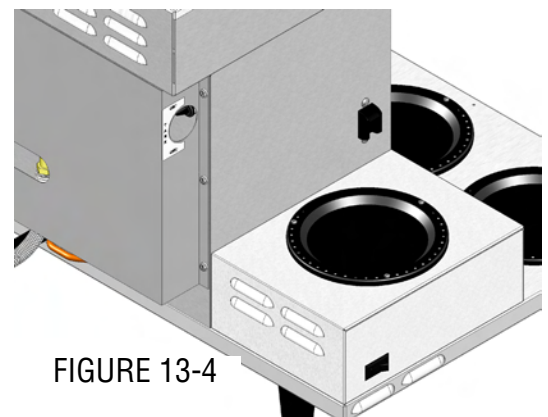


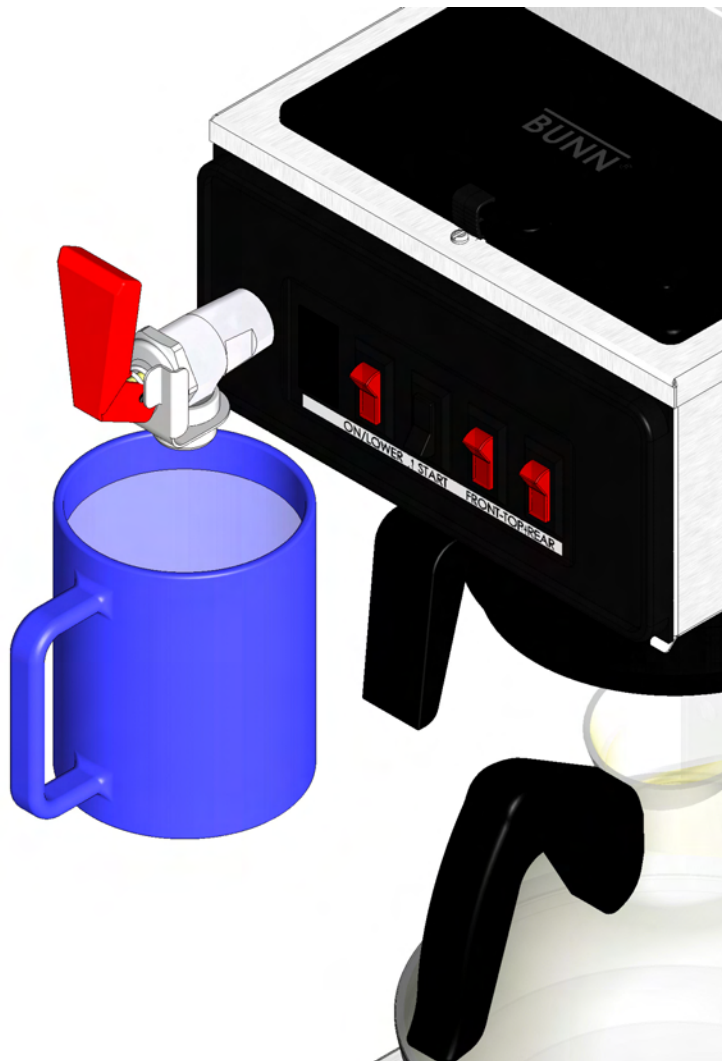
FIGURE 13-4

COFFEE BREWING

1. Insert a BUNN® filter into the funnel.
2. Pour the fresh coffee into the filter and level the bed of grounds by gently shaking.
3. Slide the funnel into the funnel rails.
4. Place an empty dispenser beneath the funnel.
5. Place the "ON/OFF" switch in the "ON" upper position. Momentarily press and release the start switch.
6. When brewing is completed, simply discard the grounds and filter.

HOT WATER FAUCET

The hot water faucet may be used to dispense a cup of hot water at any time. Not intended for filling carafes, pitchers, etc. Attempting to dispense more than 8-10 ounces will result in cool water. **NOTE** – Faucet will not work with the pour in feature, brewer must be plumbed to a working water supply line.



CLEANING

1. The use of a damp cloth rinsed in any mild, non-abrasive, liquid detergent is recommended for cleaning all surfaces on Bunn-O-Matic equipment. *Use care when cleaning around the heater switch with a cloth, so as not to accidentally turn off the tank heater!*
2. Clean out the sprayhead holes. A properly cleaned sprayhead will leave a dimple in the bed of coffee grounds for each hole. Example: 6 holes = 6 dimples. FIG 15-1/2
3. With the sprayhead removed, insert the deliming spring (provided) all the way into the sprayhead tube. When inserted properly, no more than two inches of spring should be visible. Saw back and forth five or six times. FIG 15-3. **NOTE** – In hard water areas, this may need to be done daily. It will help prevent liming problems in the brewer and takes less than a minute.
4. The faucet aerator may be removed for cleaning. Unscrew aerator assembly (counterclockwise from bottom) FIG 15-5

WARNING: DO NOT ATTEMPT TO DISASSEMBLE REMAINDER OF FAUCET ASSEMBLY UNTIL BREWER IS DISCONNECTED FROM WATER LINE.



FIG 15-1

Normal pattern



FIG 15-2

Plugged Sprayhead Hole

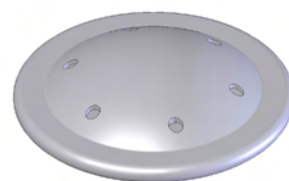


FIG 15-3

Clean Sprayhead Holes

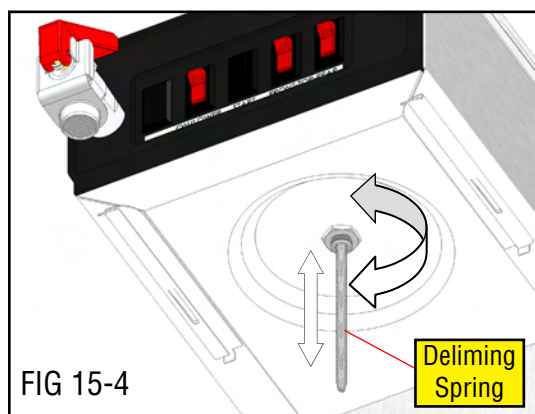


FIG 15-4

Twist deliming spring while pushing in

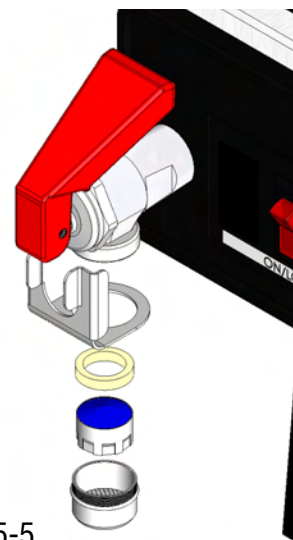


FIG 15-5

Aerator disassembly

TROUBLESHOOTING

A troubleshooting guide is provided to suggest probable causes and remedies for the most likely problems encountered. If the problem remains after exhausting the troubleshooting steps, contact the Bunn-O-Matic Technical Service Department.

- Inspection, testing, and repair of electrical equipment should be performed only by qualified service personnel.
- All electronic components have 120 volt ac and low voltage dc potential on their terminals. Shorting of terminals or the application of external voltages may result in board failure.
- Intermittent operation of electronic circuit boards is unlikely. Board failure will normally be permanent. If an intermittent condition is encountered, the cause will likely be a switch contact or a loose connection at a terminal or crimp.
- Solenoid removal requires interrupting the water supply to the valve. Damage may result if solenoids are energized for more than ten minutes without a supply of water.
- The use of two wrenches is recommended whenever plumbing fittings are tightened or loosened. This will help to avoid twists and kinks in the tubing.
- Make certain that all plumbing connections are sealed and electrical connections tight and isolated.
- This brewer is heated at all times. Keep away from combustibles.

WARNING – • Exercise extreme caution when servicing electrical equipment.
 • Unplug the brewer when servicing, except when electrical tests are specified.
 • Follow recommended service procedures
 • Replace all protective shields or safety notices

PROBLEM	PROBABLE CAUSE	REMEDY
Brew cycle will not start	1. ON/LOWER Switch is off.	Turn on switch.
	2. No power	(A) Turn on main power switch. (B) Check that the power cord is securely plugged into outlet. (C) Check circuit breakers or fuses.
	3. No water	(A) Water lines and valves to the brewer must be open. (B) Check for plugged water filter
Water is not hot	1. Heater switch turned off.	Turn on switch
Inconsistent beverage level	1. Lime Build-up	(A) Use deliming spring. (B) Clean sprayhead. (Page 11)
	2. Water Pressure fluctuating.	Have a pressure regulator Installed.
Consistently low or high beverage level.	1. Timer adjustment.	Adjust timer (Page 10)

TROUBLESHOOTING (cont.)

PROBLEM	PROBABLE CAUSE	REMEDY
Spitting or excessive steaming	1. Lime Build-up	(A) Use deliming spring. (B) Clean sprayhead. (Page 11)
Dripping from sprayhead	1. Syphon System	The brewer must be level or slightly lower in front to syphon properly.
Brew cycle starts when ON/ LOWER Switch is turned on.	Auxiliary brew start switch on TWINS inadvertently activated.	Move objects away from brewer.
Weak beverage	1. Filter Type	BUNN® paper filters must be used for proper extraction.
	2. Coffee Grind	A fine or drip grind must be used for proper extraction.
	3. Sprayhead	A clean spray-head must be used for proper extraction.
	4. Funnel Loading	The BUNN® paper filter must be centered in the funnel and the bed of ground leveled by gentle shaking.
	5. Water Temperature	Place an empty funnel on an empty dispenser beneath the sprayhead. Initiate a brew cycle and check the water temperature immediately below the sprayhead with a thermometer. The reading should not be less than 195°F (76°C). Adjust the control thermostat to increase the water temperature. Replace if necessary.
Dry coffee grounds remain in the funnel	1. Funnel Loading	The BUNN® paper filter must be centered in the funnel and the bed of grounds leveled by gently shaking.
	2. Sprayhead	A clean spray-head must be used for proper extraction.

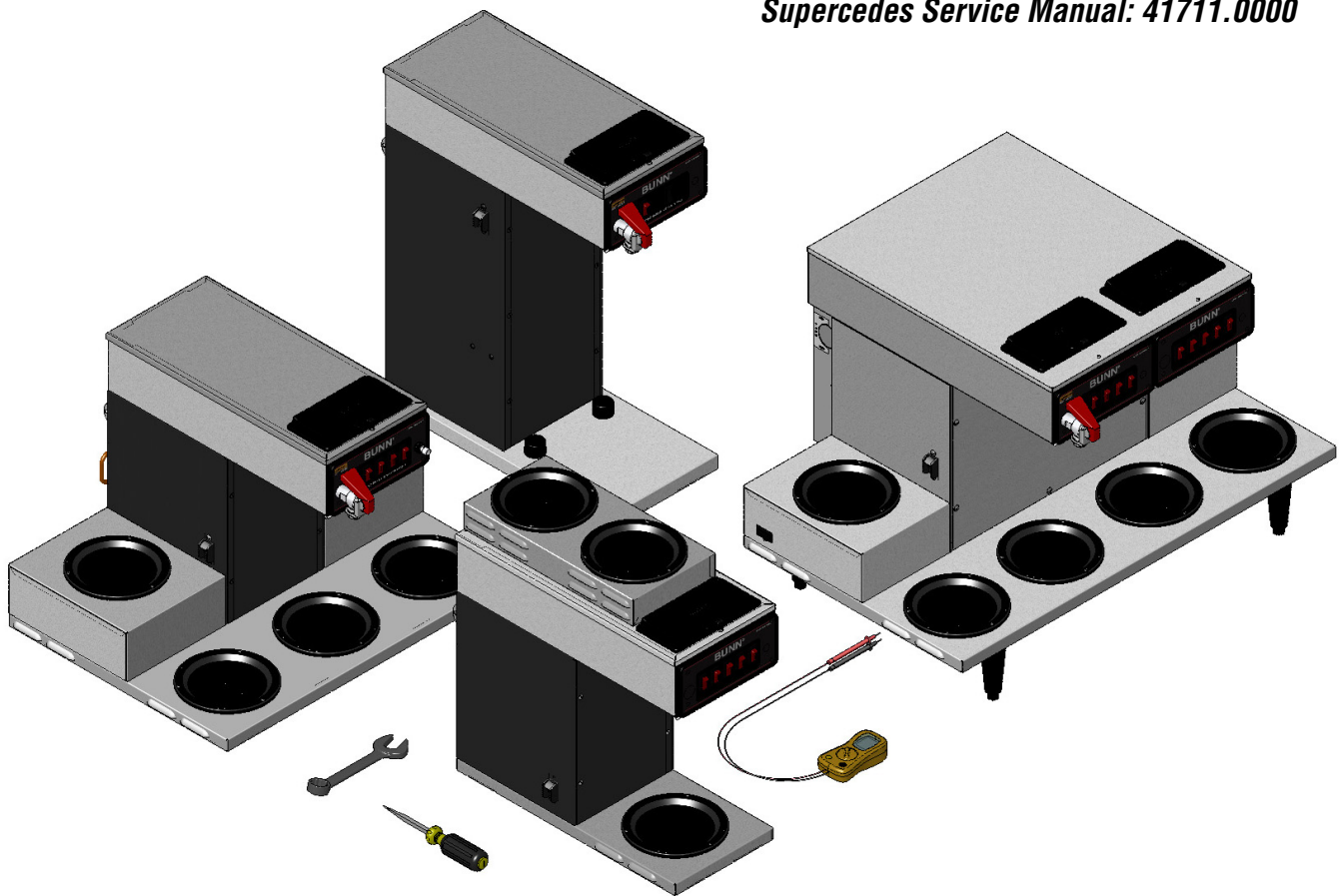
PART II

Service and Repair Manual

BUNN®

***C, CS, CT, CWTF,
CRT, CRTF Series***

***Including
DV, MV, APS/TC/TS,
Single CW & Twins***
Supersedes Service Manual: 41711.0000



SERVICE & REPAIR MANUAL

BUNN-O-MATIC CORPORATION

POST OFFICE BOX 3227

SPRINGFIELD, ILLINOIS 62708-3227

PHONE: (217) 529-6601 FAX: (217) 529-6644



BUNN-O-MATIC COMMERCIAL PRODUCT WARRANTY

Bunn-O-Matic Corp. ("BUNN") warrants equipment manufactured by it as follows:

- 1) All equipment other than as specified below: 2 years parts and 1 year labor.
- 2) Electronic circuit and/or control boards: parts and labor for 3 years.
- 3) Compressors on refrigeration equipment: 5 years parts and 1 year labor.
- 4) Grinding burrs on coffee grinding equipment to grind coffee to meet original factory screen sieve analysis: parts and labor for 3 years or 30,000 pounds of coffee, whichever comes first.

These warranty periods run from the date of installation BUNN warrants that the equipment manufactured by it will be commercially free of defects in material and workmanship existing at the time of manufacture and appearing within the applicable warranty period. This warranty does not apply to any equipment, component or part that was not manufactured by BUNN or that, in BUNN's judgment, has been affected by misuse, neglect, alteration, improper installation or operation, improper maintenance or repair, damage or casualty. This warranty is conditioned on the Buyer 1) giving BUNN prompt notice of any claim to be made under this warranty by telephone at (217) 529-6601 or by writing to Post Office Box 3227, Springfield, Illinois 62708-3227; 2) if requested by BUNN, shipping the defective equipment prepaid to an authorized BUNN service location; and 3) receiving prior authorization from BUNN that the defective equipment is under warranty.

THE FOREGOING WARRANTY IS EXCLUSIVE AND IS IN LIEU OF ANY OTHER WARRANTY, WRITTEN OR ORAL, EXPRESS OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, ANY IMPLIED WARRANTY OF EITHER MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. The agents, dealers or employees of BUNN are not authorized to make modifications to this warranty or to make additional warranties that are binding on BUNN. Accordingly, statements by such individuals, whether oral or written, do not constitute warranties and should not be relied upon.

If BUNN determines in its sole discretion that the equipment does not conform to the warranty, BUNN, at its exclusive option while the equipment is under warranty, shall either 1) provide at no charge replacement parts and/or labor (during the applicable parts and labor warranty periods specified above) to repair the defective components, provided that this repair is done by a BUNN Authorized Service Representative; or 2) shall replace the equipment or refund the purchase price for the equipment.

THE BUYER'S REMEDY AGAINST BUNN FOR THE BREACH OF ANY OBLIGATION ARISING OUT OF THE SALE OF THIS EQUIPMENT, WHETHER DERIVED FROM WARRANTY OR OTHERWISE, SHALL BE LIMITED, AT BUNN'S SOLE OPTION AS SPECIFIED HEREIN, TO REPAIR, REPLACEMENT OR REFUND.

In no event shall BUNN be liable for any other damage or loss, including, but not limited to, lost profits, lost sales, loss of use of equipment, claims of Buyer's customers, cost of capital, cost of down time, cost of substitute equipment, facilities or services, or any other special, incidental or consequential damages.

AutoPOD, AXIOM, BrewLOGIC, BrewMETER, Brew Better Not Bitter, BrewWISE, BrewWIZARD, BUNN Espresso, BUNN Family Gourmet, BUNN Gourmet, BUNN Pour-O-Matic, BUNN, BUNN with the stylized red line, BUNNlink, Bunn-OMatic, Bunn-O-Matic, BUNNserve, BUNNSERVE with the stylized wrench design, Cool Froth, DBC, Dr. Brew stylized Dr. design, Dual, Easy Pour, EasyClear, EasyGard, FlavorGard, Gourmet Ice, Gourmet Juice, High Intensity, iMIX, Infusion Series, Intellisteam, My Café, PowerLogic, Quality Beverage Equipment Worldwide, Safety-Fresh, savemycoffee.com, Scale-Pro, Silver Series, Single, Smart Funnel, Smart Hopper, SmartWAVE, Soft Heat, SplashGard, The Mark of Quality in Beverage Equipment Worldwide, ThermoFresh, 392, Beverage Bar Creator, Beverage Profit Calculator, BUNNSource, Coffee At Its Best, Digital Brewer Control, Nothing Brews Like a BUNN, Pouring Profits, Respect Earth, Respect Earth with the stylized leaf and coffee cherry design, Signature Series, Tea At Its Best, The Horizontal Red Line, Titan, Ultra are either trademarks or registered trademarks of Bunn-O-Matic Corporation.

Contents

Trouble Shooting.....	4
Component Access	10
Control Thermostat.....	10
Electronic Thermostat.....	11
ON/OFF Switch.....	12
Start Switch (Brew).....	13
Solenoid (Inlet)	14
Tank Heater	16
Fill Basin	16
Tank Heater Switch	18
Thermal Cut-Off	20
Coil/Faucet	21
Limit Thermostat.....	22
Recovery Booster.....	23
Timer (Early Model)	24
Freshness Timer (Early Models).....	25
Digital Brew Timer (Late Model)	26
Warmer Elements.....	28
Schematic Wiring Diagrams.....	29

TROUBLESHOOTING

A troubleshooting guide is provided to suggest probable causes and remedies for the most likely problems encountered. If the problem remains after exhausting the troubleshooting steps, contact the Bunn-O-Matic Technical Service Department.

- Inspection, testing, and repair of electrical equipment should be performed only by qualified service personnel.
- All electronic components have 120 volt ac and low voltage dc potential on their terminals. Shorting of terminals or the application of external voltages may result in board failure.
- Intermittent operation of electronic circuit boards is unlikely. Board failure will normally be permanent. If an intermittent condition is encountered, the cause will likely be a switch contact or a loose connection at a terminal or crimp.
- Solenoid removal requires interrupting the water supply to the valve. Damage may result if solenoids are energized for more than ten minutes without a supply of water.
- The use of two wrenches is recommended whenever plumbing fittings are tightened or loosened. This will help to avoid twists and kinks in the tubing.
- Make certain that all plumbing connections are sealed and electrical connections tight and isolated.
- This brewer is heated at all times. Keep away from combustibles.

WARNING –

- Exercise extreme caution when servicing electrical equipment.
- Unplug the brewer when servicing, except when electrical tests are specified.
- Follow recommended service procedures
- Replace all protective shields or safety notices

PROBLEM	PROBABLE CAUSE	REMEDY
Brew cycle will not start	1. No water	Water lines and valves to the brewer must be open.
	2. No power or incorrect voltage to the brewer	(A1) Check the terminal block for 120 volts across the black and white terminals on two wire 120 volt brewers. (A2) Check the terminal block for 120 volts across the red and white terminals and the black and white terminal on three wire 120/240 volt brewers. (A3) Check the terminal block for 200 volts on "B Series" brewers or 240 volts on "A Series" brewers across the red and black terminals. (B) Check circuit breakers or fuses.

TROUBLESHOOTING (cont.)

PROBLEM	PROBABLE CAUSE	REMEDY
Brew cycle will not start (cont.)	3. ON/OFF Switch	Refer to Service - ON/OFF Switch for testing.
	4. Start Switch	Refer to Service - Start Switch for testing procedures.
	5. Timer	Refer to Service - Timer for testing procedures.
	6. Solenoid Valve	Refer to Service - Solenoid Valve for testing procedures.
	7. Water strainer/flow control (.222 GPM) Early models	(A) Direction of flow arrow must be pointing towards brewer. (B) Remove the strainer/flow control and check for obstructions. Clear or replace.
Water is not hot	1. Tank Heater Switch	Refer to Service - Tank Heater Switch for testing procedures.
	2. (A) Limit Thermostat (B) Thermal Cut-Off (Brewers with Faucet) CAUTION - Do not eliminate or bypass limit thermostat or thermal cut-off. Use only BOM replacement parts.	Refer to Service - Limit Thermostat for testing procedures. Thermal Cut-Off for testing procedures.
	3. Control Thermostat	Refer to Service - Control Thermostat for testing procedures.
	4. Tank Heater	Refer to Service - Tank Heater for testing procedures.

Part II
TROUBLESHOOTING (cont.)

PROBLEM	PROBABLE CAUSE	REMEDY
Inconsistent beverage level in dispenser	<p>1. Strainer /flow control (.222 GPM) Early models.</p> <p>2. Syphon System</p> <p>3. Lime Build-up CAUTION - Tank and tank components should be delimed regularly depending on local water conditions. Excessive mineral build-up on stainless steel surfaces can initiate corrosive reactions resulting in serious leaks.</p> <p>4. Water Pressure</p>	<p>(A) Direction of flow arrow must be pointing towards the brewer.</p> <p>(B) Remove the strainer/flow control and check for obstruction. Clear or replace.</p> <p>The brewer must be level or slightly lower in front to syphon properly.</p> <p>Inspect the tank assembly for excessive lime deposits. Delime as required.</p> <p>The water pressure to the brewer must be at least 20 psi (138 kPa).</p>
Consistently low beverage level in the dispenser	<p>1. Timer</p> <p>2. Strainer/flow Control (.222 GPM)</p>	<p>Timer must be set for at least two minutes and fifteen seconds.</p> <p>(A) Direction of flow arrow must be pointing towards brewer.</p> <p>(B) Remove the strainer/flow control and check for obstructions. Clear or replace.</p>
Spitting or excessive steaming	<p>1. Lime Build-up CAUTION - Tank and tank components should be delimed regularly depending on local water conditions. Excessive mineral build-up on stainless steel surfaces can initiate corrosive reactions resulting in serious leaks.</p>	<p>Inspect tank assembly for excessive lime deposits. Delime as required.</p>

TROUBLESHOOTING (cont.)

PROBLEM	PROBABLE CAUSE	REMEDY
Spitting or excessive steaming (cont.)	2. Control Thermostat	Refer to Service - Control Thermostat for testing procedures.
Dripping from sprayhead	1. Syphon System	The brewer must be level or slightly lower in front to syphon properly.
	2. Lime Build-up CAUTION - Tank and tank components should be delimed regularly depending on local water conditions. Excessive mineral build-up on stainless steel surfaces can initiate corrosive reactions resulting in serious leaks.	Inspect the tank assembly for excessive lime deposits. Delime as required.
	3. Solenoid Valve	Remove the solenoid valve and clear any obstructions. Rebuild or replace the valve if necessary.
Water flows into tank continuously (ON/OFF Switch "ON")	1. Timer	Refer to Service - Timer for testing procedures.
Water flows into tank continuously (ON/OFF Switch "OFF")	1. Solenoid Valve	Remove the Solenoid Valve and clean any obstruction. Rebuild or replace the valve if necessary.
Beverage overflows dispenser	1. Dispenser	The dispenser must be completely empty before starting a brew cycle.
	2. Timer	Refer to Service - Timer for testing procedures.
	3. Solenoid Valve	Remove the Solenoid Valve and clean any obstruction. Rebuild or replace the valve if necessary.

PROBLEM	PROBABLE CAUSE	REMEDY
Weak beverage	1. Filter Type	BUNN® paper filters must be used for proper extraction.
	2. Coffee Grind	A fine or drip grind must be used for proper extraction.
	3. Sprayhead	A six-hole stainless steel sprayhead must be used for proper extraction.
	4. Funnel Loading	The BUNN® paper filter must be centered in the funnel and the bed of ground leveled by gentle shaking.
	5. Water Temperature	Place an empty funnel on an empty dispenser beneath the sprayhead. Initiate a brew cycle and check the water temperature immediately below the sprayhead with a thermometer. The reading should not be less than 195°F (76°C). Adjust the control thermostat to increase the water temperature. Replace if necessary.
Dry coffee grounds remain in the funnel	1. Funnel Loading	The BUNN® paper filter must be centered in the funnel and the bed of grounds leveled by gently shaking.
Brewer is making unusual noises	1. Solenoid	The nut on the solenoid must be tight or it will vibrate during operation.
	2. Plumbing Lines	Plumbing lines should not resting on the counter top.
	3. Water Supply	(A) The brewer must be connected to a cold water line. (B) Water pressure to the brewer must not exceed 90 psi (620 kPa). Install a regulator if necessary to lower the working pressure to approximately 50 psi (345 kPa).

TROUBLESHOOTING (cont.)

PROBLEM	PROBABLE CAUSE	REMEDY
Brewer is making unusual noises (cont.)	4. Tank Heater	Remove and clean lime off the tank heater.
Low beverage serving temperature	1. Warmer	Refer to Service - Warmer element for testing procedures.
	2. ON/OFF Switch	Refer to Service - ON/OFF Switch for testing procedures.

SERVICE

This section provides procedures for testing and replacing various major components used in this brewer should service become necessary. Refer to Troubleshooting for assistance in determining the cause of any problem.

WARNING - Inspection, testing, and repair of electrical equipment should be performed only by qualified service personnel. The brewer should be unplugged when servicing, except when electrical tests are required and the test procedure specifically states to plug-in the brewer.

COMPONENT ACCESS

WARNING - Disconnect the brewer from the power source before the removal of any panel or the replacement of any component.

All components are accessible by the removal of the top cover, front inspection panel, warmer plate(s) and rear utility cover (Twins only).

CONTROL THERMOSTAT

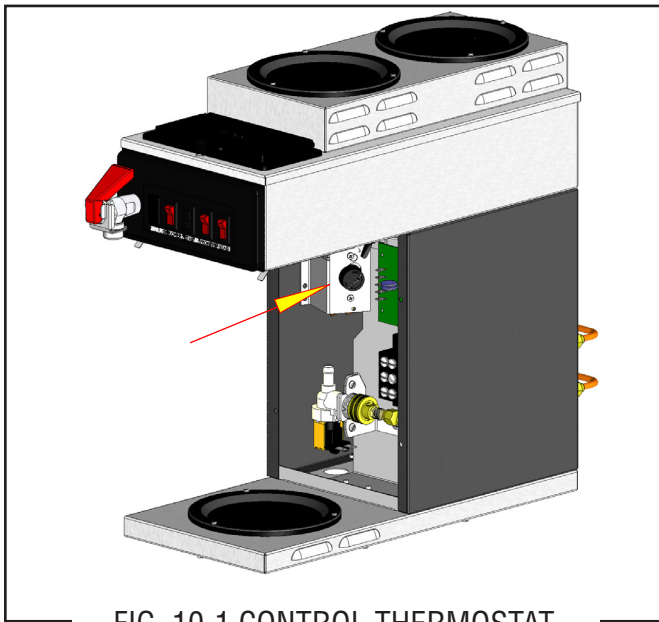


FIG. 10-1 CONTROL THERMOSTAT

Location:

The control thermostat is located inside the trunk on the upper left side of the component bracket.

Test Procedures:

1. Disconnect the brewer from the power source.
2. Disconnect the leads from control thermostat.

3. Gently remove the capillary bulb and grommet from the tank.
4. Check for continuity across the thermostat terminals. The indication must be:
 - a) Continuity with knob rotated fully clockwise.
 - b) No continuity with knob rotated fully counterclockwise. NOTE: First style does not have the ON/OFF feature, simply check continuity.

If continuity is not present as described, replace control thermostat.

If continuity is present as described, refer to the wiring diagrams and check the brewer wiring harness.

Removal and Replacement:

1. Disconnect the control thermostat wires.
2. Remove the thermostat capillary bulb by firmly pulling up on the capillary at the tank lid. This will disengage the grommet from the tank lid.
3. Remove the one #8-32 screw securing the control thermostat to the component bracket inside the trunk.
4. Slide the grommet to the line 4.5" above the bulb on the new capillary tube.
5. Insert the capillary bulb through the hole in the tank lid and press the grommet firmly and evenly so that the groove in the grommet fits into the tank lid.
6. Carefully bend the capillary tube so that the tube and bulb inside the tank are in the vertical position.

NOTE - The capillary tube must be clear of any electrical termination and not kinked.

7. Using #8-32 screw(s), secure the control thermostat to the component bracket inside the trunk.
8. For first type thermostat, refer to Wiring Diagrams when reconnecting thermostat wires.
9. Adjust the control thermostat as required.

NOTE: First type will only turn approximately one turn. Clockwise to the stopper is approximately 180° F, maximum counterclockwise to stopper is approximately 200° F.

Later types will be approximately 200° F when turned maximum clockwise. Turning it counterclockwise until it clicks will turn off (open contacts).

SERVICE (cont.)**OPTIONAL ELECTRONIC THERMOSTAT (ERT):**

The ERT is located inside the trunk on the upper left side of the component bracket.

Test Procedures:

1. Disconnect the brewer from the power source.
2. Gently remove the temperature sensor and grommet from the tank.
3. Check voltage across the blue wire from limit thermostat and the white wire at the terminal block. Connect the brewer to the power source. The indication must be: 120Vac.

If voltage is not present as described, refer to the wiring diagrams and check the brewer wiring harness.

If voltage is present as described, proceed to #4.

4. Disconnect the brewer from the power source.
5. With the temperature sensor and grommet still out of the tank, check voltage across the black wire to the heater and the white wire at the terminal block. Connect the brewer to the power source. The indication must be: 120Vac.

If voltage is not present as described, replace ERT.

If voltage is present as described, the ERT is functioning properly.

Removal and Replacement:

1. Disconnect the control thermostat wires.
2. Remove the temperature sensor by firmly pulling-up on the metal sheath at the tank lid. This will disengage the grommet from the tank lid.
3. Remove the one #8-32 screw securing the ERT to the component bracket inside the trunk.
4. Slide the grommet to the top of the sheath.
5. Insert the temperature sensor through the hole in the tank lid and press the grommet firmly and evenly so that the groove in the grommet fits into the tank lid.
6. Using the #8-32 screw, secure the ERT to the component bracket inside the trunk.
7. For first type thermostat, refer to Wiring Diagrams when reconnecting ERT wires.
8. Adjust the ERT as required.

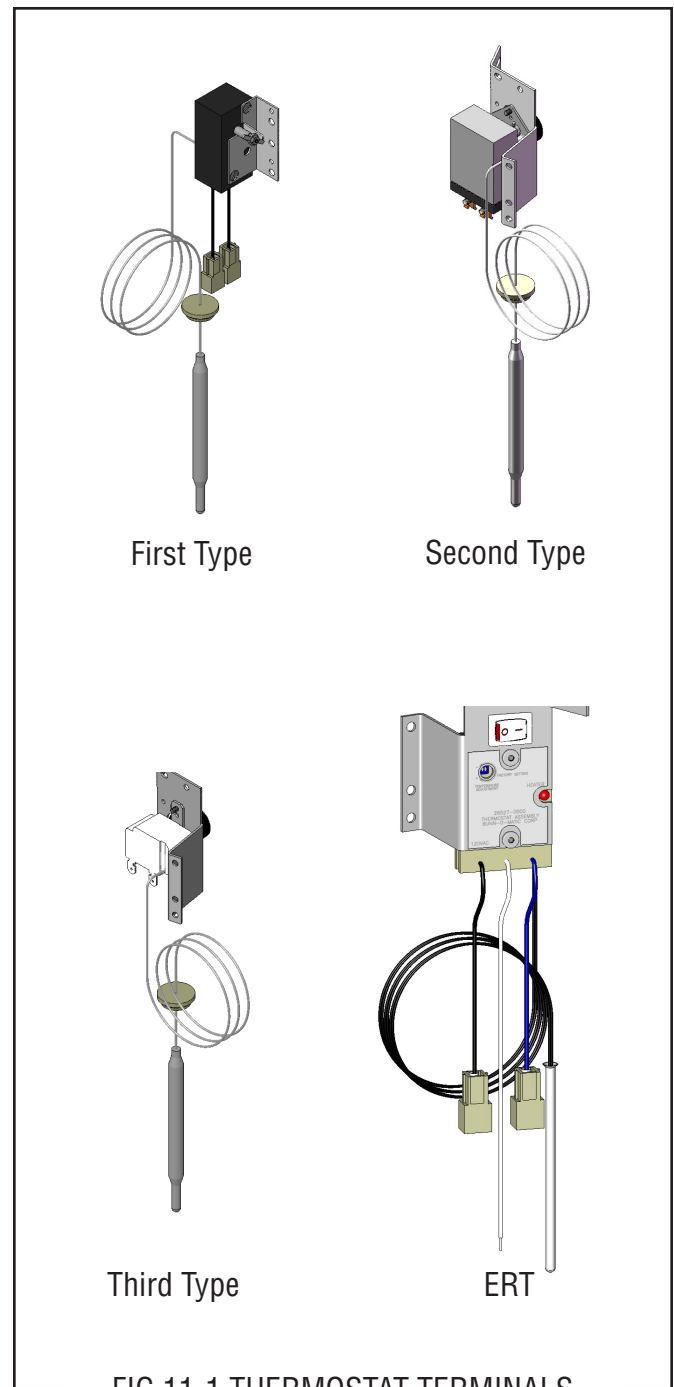


FIG 11-1 THERMOSTAT TERMINALS

NOTE: The ERT has a range of 170° - 210°F. Use care not to set it too high or boiling could occur.

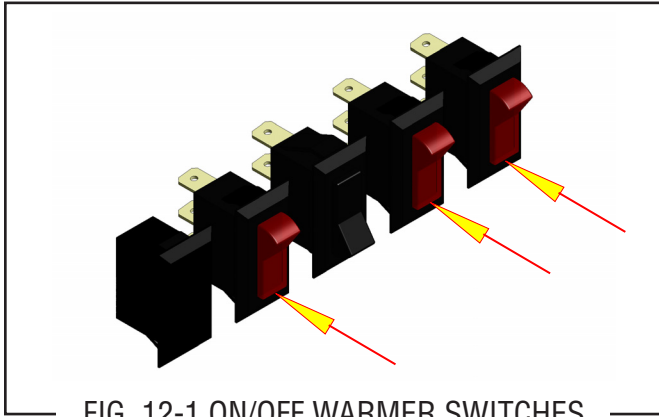
SERVICE (cont.)**ON/OFF WARMER SWITCH**

FIG. 12-1 ON/OFF WARMER SWITCHES

Location:

The ON/OFF switch(s) are located on the front of the hood.

Test Procedure:

1. Disconnect the brewer from the power source.
2. Viewing the switch from the back remove the white or red wire from the upper terminal and the black wire from the center terminal.
3. Check the voltage across the white wire or red wire and the black wire with a voltmeter. Connect the brewer to the power source. The indication must be:
 - a) 120 volts ac for two wire 120 volt models and three wire 120/240 volt models.
 - b) 200 to 240 volts ac for two wire 200 or 240 volt models.
4. Disconnect the brewer from the power source.

If voltage is present as described, reconnect the white or red wire and proceed to #5.

If voltage is not present as described, refer to the Wiring Diagrams and check the brewer wiring harness.

5. With the black wire removed, remove the wire from the lower terminal.
6. Check for continuity across the center and lower terminal with the switch in the "ON" position. Continuity must not be present when the switch is in the "OFF" position.

If continuity is present as described, reconnect the black wire to the center terminal and the remaining wire to the lower terminal.

If continuity is not present as described, replace the switch.

Removal and Replacement:

1. Remove the wires from the switch terminals.
2. Compress the clips inside the hood and gently push the switch through the opening.
3. Push the new switch into the opening and spread the clips to hold switch in the hood.
4. Refer to Fig.7 when reconnecting the wires.

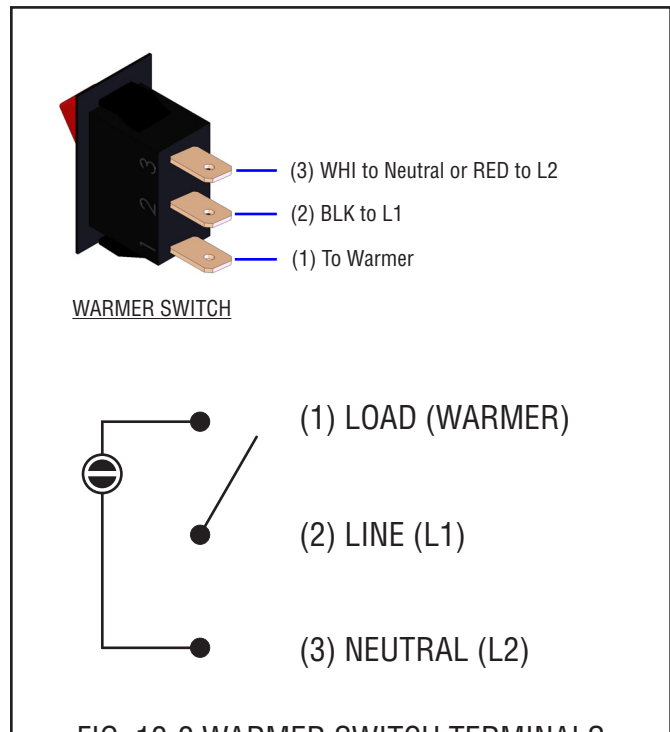


FIG. 12-2 WARMER SWITCH TERMINALS

SERVICE (cont.)

START SWITCHES

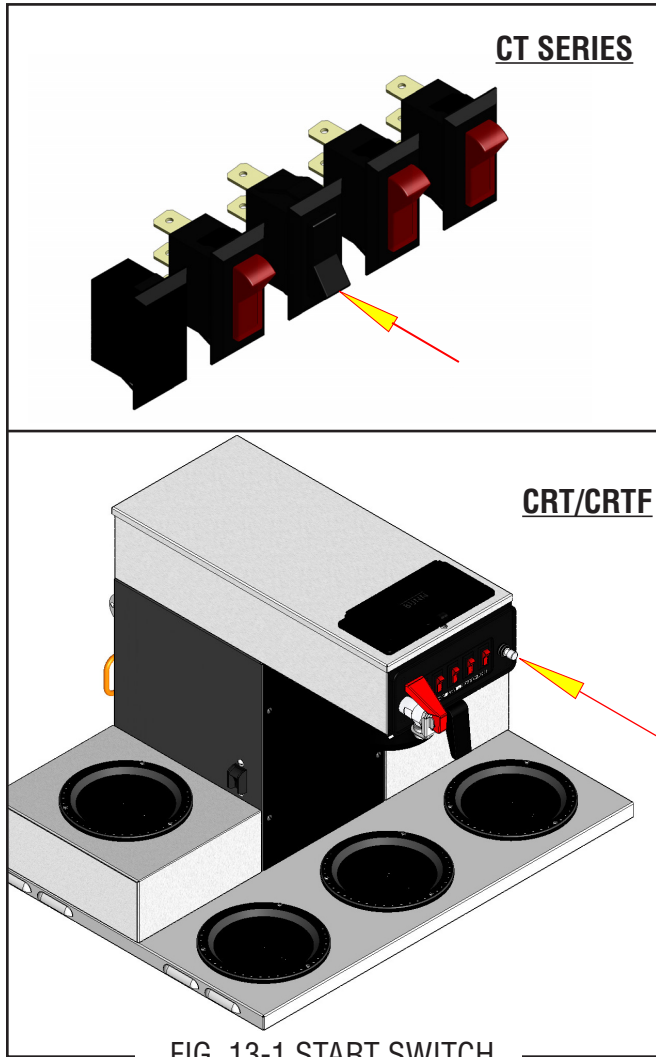


FIG. 13-1 START SWITCH

Location: CRT/CRTF

On brewers w/out fresh light, the start switch is located in the right front of the hood.

On brewers w/fresh light, the start switch is located on the right side of the hood.

Location: CT/CWT/CWTF/TWINS

On most "CT" series brewers, the start switch is located in the front of the hood.

On some "convertible" or "CS" brewers, the start switch is located on either the right or left side of the hood.

NOTE: Optional on the left and right side warmer housings on 0/6 TWINS, connected in parallel to front mounted start switches.

Test Procedure:

1. Disconnect the brewer from the power supply.
2. Disconnect the blue wire and the white/red wire from the switch terminals.
3. Check for continuity across the two terminals on the switch when it is held in the "pressed-in" position. Continuity must not be present across these terminals in the released position.

If continuity is present as described, reconnect the blue wire and the white/red to the switch terminals.

If continuity is not present as described, replace the switch.

Removal and Replacement:

1. Remove the blue wire and white/red from the start switch.
2. Remove round retaining nut from the front of the switch and remove switch and internal tooth lockwasher from the inside of the hood.
3. Push new switch with internal tooth lockwasher through the hole in the hood and secure with round retaining nut.
4. Refer to Fig. 11 when reconnecting the wires.

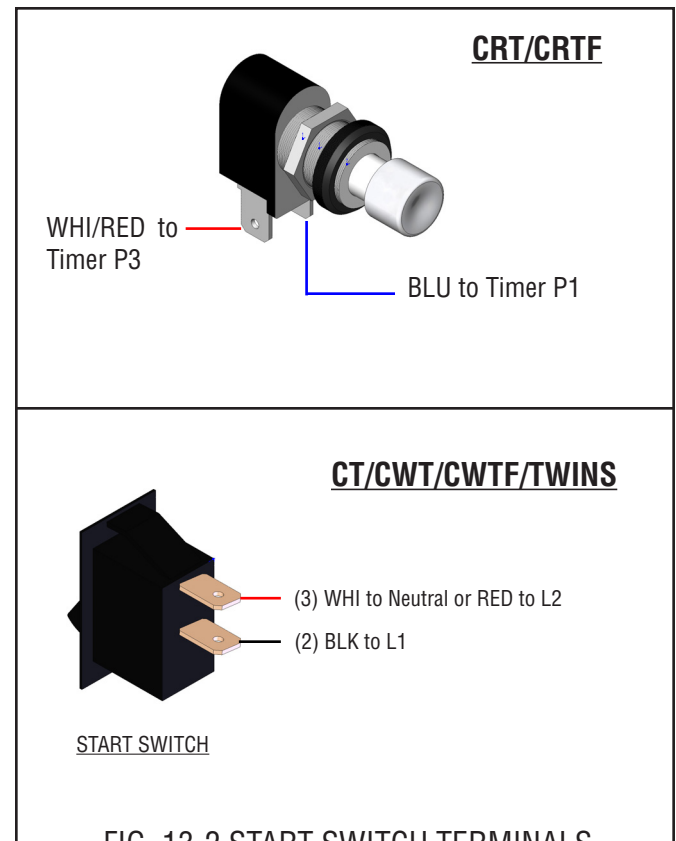
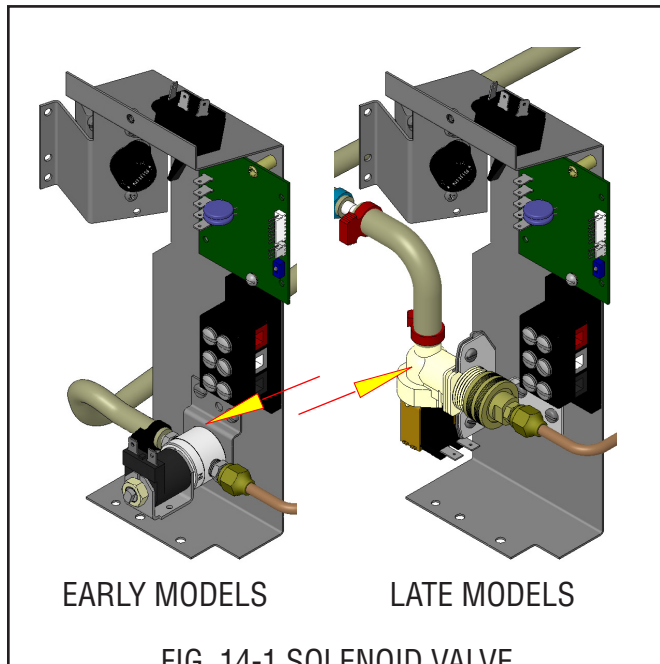


FIG. 13-2 START SWITCH TERMINALS

Part II
SERVICE (cont.)
SOLENOID VALVES



Location:

The solenoid valve is located inside the trunk on the lower center part of the component bracket.

Test Procedures:

1. Disconnect the brewer from the power source.
2. Disconnect the white and black wires from the solenoid valve. With the "ON/OFF" switch in the "ON" upper position press the start switch.
3. Check the voltage across the white and black wires with a voltmeter. Connect the brewer to the power source. The indication must be:
 - a) 120 volts ac for two wire 120 volt models and three wire 120/240 volt models.
 - b) 200 to 240 volts ac for two wire 200 or 240 volt models.
4. Disconnect the brewer from the power source,

If voltage is present as described, proceed to #5
If voltage is not present as described, refer to Wiring Diagrams and check brewer wiring harness.

5. Check for resistance across the solenoid valve coil terminals.

If resistance is present as described, reconnect the white and black wire from the timer.

If resistance is not present as described, replace the solenoid valve.

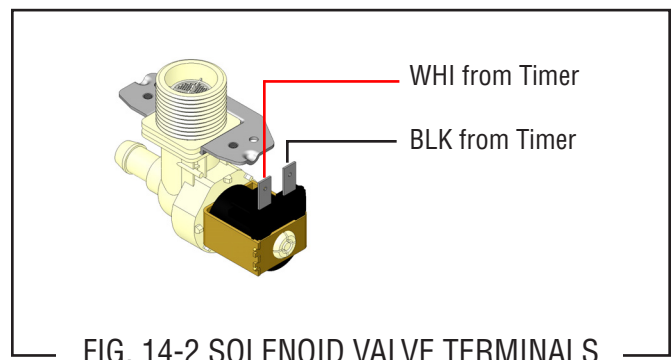
6. Check the solenoid valve for coil action. Connect the brewer to the power source. With "ON/OFF" switch in the "ON" upper position press start switch and listen carefully in the vicinity of the solenoid valve for a "clicking" sound as the coil magnet attracts.
7. Disconnect the brewer from the power source.

If the sound is heard as described and water will not pass through the solenoid valve, there may be a blockage in the water line before the solenoid valve or, the solenoid valve may require inspection for wear, and removal of waterborne particles.

If the sound is not heard as described, replace the solenoid valve.

Removal and Replacement:

1. Remove the white and black from the solenoid valve.
2. Turn off the water supply to the brewer.
3. Disconnect the water lines to and from the solenoid valve.
4. Remove the two #8-32 screws securing the solenoid mounting bracket to the component bracket. Remove solenoid bracket and solenoid valve as an assembly.
5. Remove the two #10-32 screws and lockwashers securing the solenoid valve to the solenoid bracket.
6. Using two #10-32 screws and lockwashers install new solenoid valve on solenoid mounting bracket.
7. Using two #8-32 screws install solenoid valve and bracket to the component bracket.
8. Securely fasten the water lines to and from the solenoid valve.
9. Refer to Fig. 9 when reconnecting the wires.

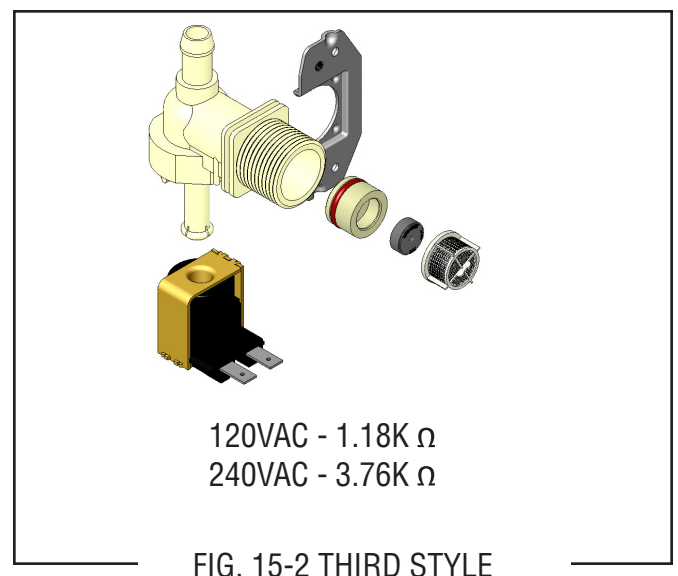
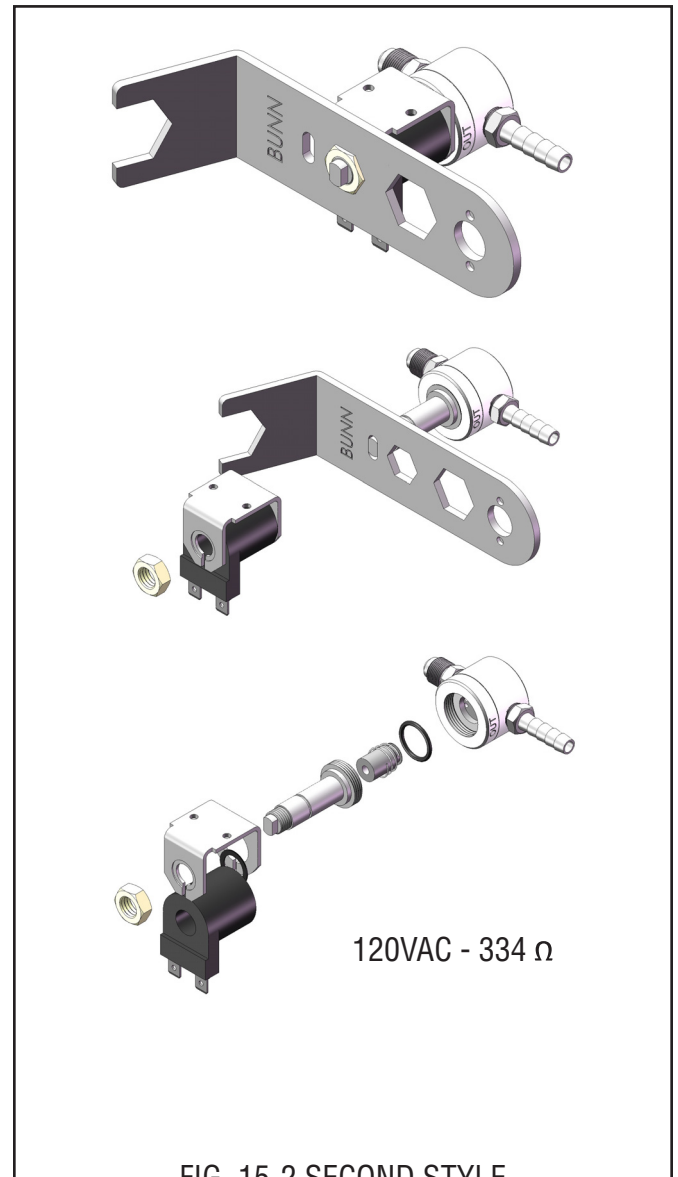
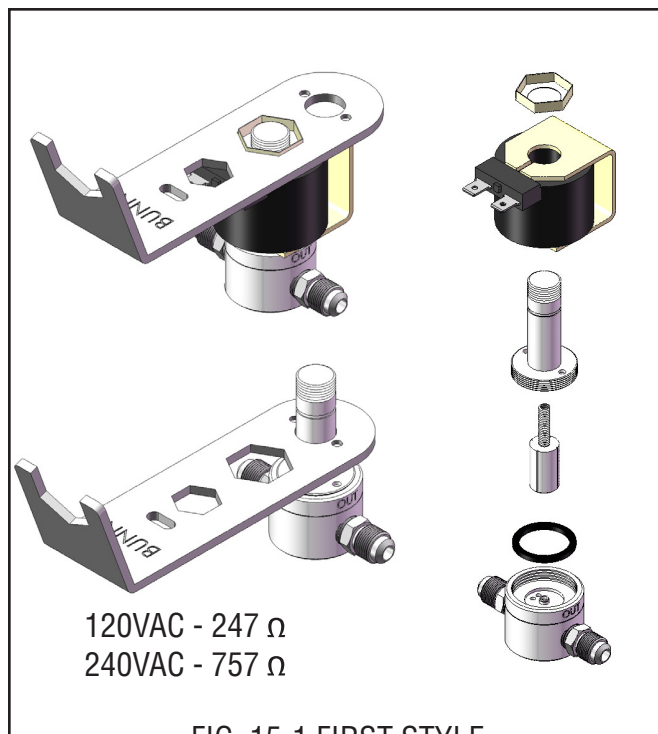


SERVICE (cont.)

SOLENOID VALVES

Disassembly:

1. Use of the basin wrench 01060.0000 is recommended for disassembly of early style valves as illustrated below.
2. Disconnect from power source and turn off the water supply to the brewer.
3. Disconnect the water lines to and from the solenoid valve.
4. Remove the two #8-32 screws securing the solenoid mounting bracket to the component bracket. Remove solenoid bracket and solenoid valve as an assembly.
5. Remove the two #10-32 screws and lock washers securing the solenoid valve to the solenoid bracket.
6. Disassemble the valve according to the illustrations that correspond to the particular valve you have.
7. On early style valves, leave the fittings installed in the base to use as leverage. **DO NOT CLAMP THE BASE WITH LOCKING PLIERS AS THIS CAN CAUSE DAMAGE!**
8. Refer to Illustrated Parts Catalogs for replacement solenoids and repair/rebuild kits.



FILL BASIN



FIG. 16-1 TANK HEATER

Disassembly:

1. Use of the basin wrench 01060.0000 is recommended for removal of the fill basin.
2. Disconnect from power source and turn off the water supply to the brewer.
3. Remove top cover.
4. Use the basin wrench (as shown above) turning counterclockwise to remove inlet fitting.
5. Lift basin off of the tank inlet.
6. Use new inlet gasket when reinstalling.

TANK HEATER

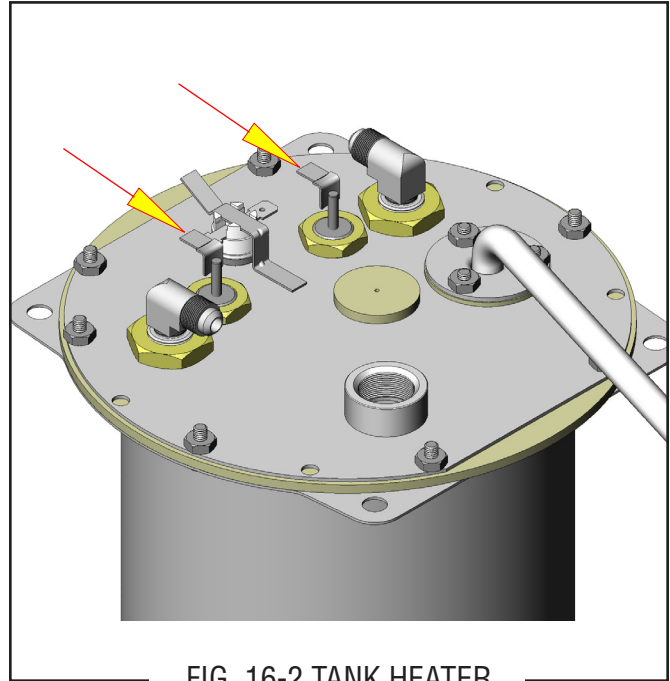


FIG. 16-2 TANK HEATER

Location:

The tank heater is located inside the tank and secured to the tank lid.

Test Procedures:

1. Disconnect the brewer from the power supply.
2. Check the voltage across the black and white wires on 120 volt models or the black and red wires for 120/240 volt models, 200 volt models and 240 volt models with a voltmeter. Connect the brewer to the power source. The indication must be:
 - a) 120 volts ac for two wire 120 volt 20 amp models .
 - b) 240 volts ac for three wire 120/240 volt models.
 - c) 200 to 240 volts ac for two wire 200 or 240 volt models.
3. Disconnect the brewer from the power source.

If voltage is present as described, proceed to #4
If voltage is not present as described, refer to the Wiring Diagrams and check wiring harness.

4. Disconnect the wires from the tank heater terminals.
5. Check resistance value across tank heater terminals and compare to chart.

SERVICE (cont.)

HEATER	RESISTANCE
1800W-120V	7.40 Ω - 8.70 Ω
1850W-220V	24.40 Ω -28.40 Ω
3500W-200V	10.70 Ω -12.36 Ω
3500W-240V	15.36 Ω -17.90 Ω
TERMINAL TO SHEATH - INFINITE (OPEN)	

— FIG. 17-1 TANK HEATER RESISTANCE —

If resistance is present as described, reconnect the wires, the tank heater is ok.

If resistance is not present as described, replace the tank heater.

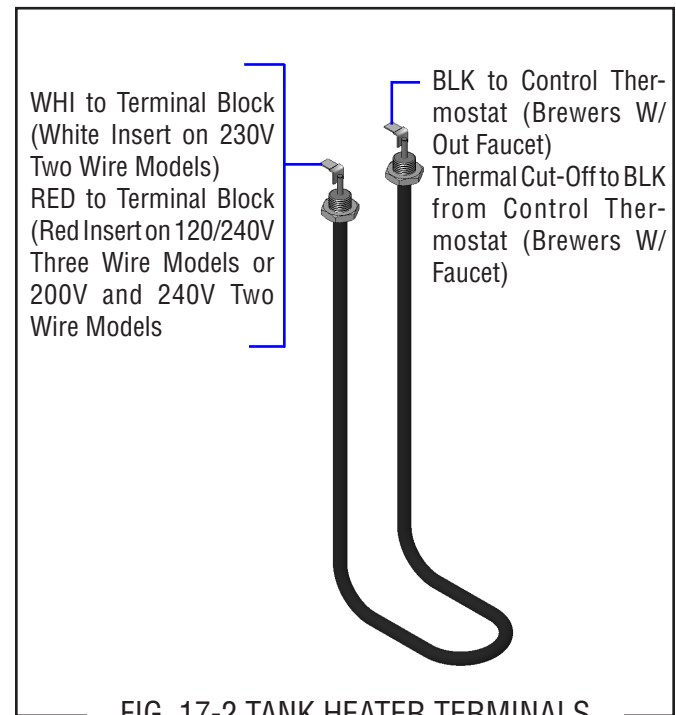
NOTE- If any resistance is read between sheath and either terminal, remove and inspect heater for cracks in the sheath.

Removal and Replacement:

1. Disconnect the water supply tube from the fill basin.
2. Remove the tank inlet fitting securing the fill basin to the tank lid, remove fill basin and tank inlet gasket. Set all three parts aside for reassembly.
3. On brewers with faucet, shut-off water supply to the brewer and disconnect the inlet and outlet water lines to the faucet coil assembly.
4. Disconnect the black wire on the limit thermostat from the tank heater switch. On late model brewers also disconnect the blue wire from the limit thermostat to the control thermostat.
5. Disconnect the black wire and the white or red wire from the tank heater terminals.
6. Remove sprayhead and the hex nut securing the sprayhead tube to the hood. Set aside for reassembly.
7. Remove the eight #8-32 nuts securing the tank lid to the tank.
8. Remove the tank lid with limit thermostat, sprayhead tube, tank heater, coil assembly and control thermostat w/bracket (early models only).
9. Remove the two hex nuts securing the tank heater to the tank lid. Remove tank heater with gaskets and discard.
10. Install new tank heater with gaskets on the tank lid and secure with two hex nuts.

TANK HEATER (Cont.)

11. Install tank lid with limit thermostat, sprayhead tube, tank heater, coil assembly (brewers with faucet) and control thermostat with bracket (early brewers only) using eight #8-32 hex nut.
12. Reconnect the inlet and outlet water lines to the faucet coil assembly.
13. Secure sprayhead tube to hood using a hex nut.
14. Install sprayhead.
15. Reconnect the wires to the limit thermostat, tank heater and control thermostat. See limit thermostat and control thermostat sections in this manual when reconnecting wires.
16. Install fill basin, secure with tank inlet fitting and gasket. Insert water supply line through grommet in fill basin.
17. Refer to Fig.13 when reconnecting the tank heater wires.



— FIG. 17-2 TANK HEATER TERMINALS —

TANK HEATER SWITCH

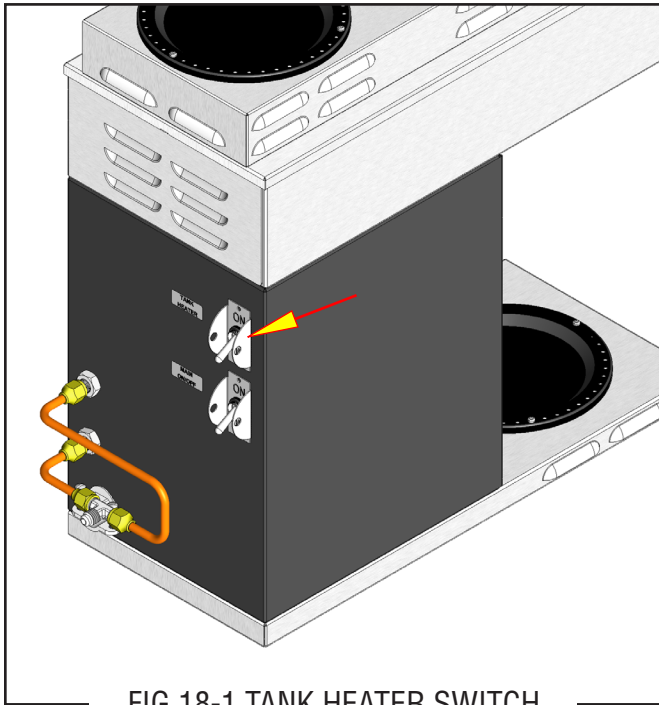


FIG 18-1 TANK HEATER SWITCH

Location:

The tank heater switch is located on the rear of the brewer on the upper left side of the trunk.

Test Procedure:

1. Disconnect the brewer from the power source.
2. Disconnect the black wire from the limit thermostat.
3. With the tank heater switch in the "ON" position and with a voltmeter, check the voltage between the black wire removed from the limit thermostat and the white wire or red wire on the tank heater. Connect the brewer to the power source. The indication must be:
 - a) 120 volts ac on two wire 120 volt models.
 - b) 240 volts ac on three wire 120/240 volt models.
 - c) 200 to 240 volts ac on 200 volt or 240 volt models.
4. Disconnect the brewer from the power source.

If voltage is not present as described, proceed to #5.

If voltage is present as described, the switch is working properly.

5. With the tank heater switch in the "ON" upper position, check for continuity between the black wire removed from the limit thermostat and the black insert on the terminal block. Continuity should not be present in the "OFF" lower position.

If continuity is present as described, the tank heater switch is operating properly.

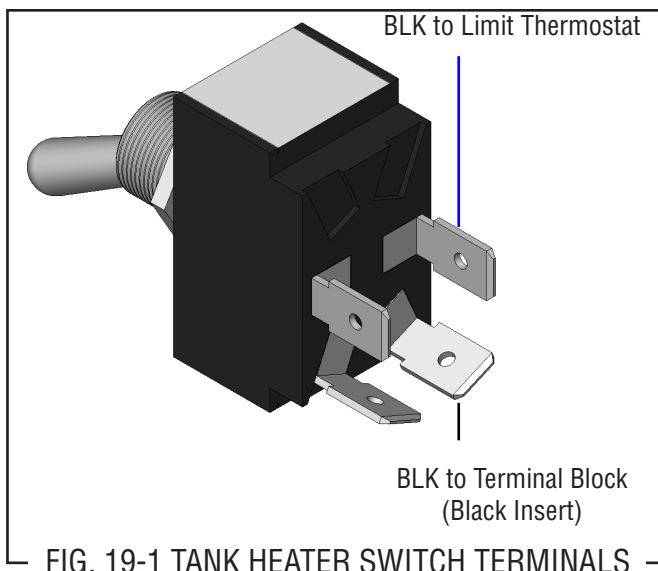
If continuity is not present as described, replace the tank heater switch.

Removal and Replacement:

1. Shut off and disconnect the incoming water supply to the brewer.
2. On automatic brewers gently remove the fill tube from back of fill basin.
3. Remove the tank inlet fitting securing fill basin the tank lid. Remove fill basin and gasket. Set all three parts aside for reassembly.
4. On brewers with faucets, disconnect the water supply to coil assembly and remove the tube from the tank to the faucet.
5. Remove sprayhead and hex nut securing sprayhead tube to the hood. Set aside for reassembly.
6. Disconnect the wires on the limit thermostat and the tank heater and the control thermostat (early models).
7. Gently pull the thermostat sensor and grommet from the tank lid.
8. Insert a tube to the bottom of the tank and syphon ALL of the water out.
9. Remove the two #8-32 screws securing the tank assembly to the hood.
10. Lift tank and components out as an assembly and set aside for reassembly.
11. Disconnect the two black wires from the tank heater switch.
12. Remove the plastic facenut, hex facenut and the switch indicator/guard bracket that secures tank heater switch to the rear of the brewer. Remove switch and discard.
13. Insert new tank heater switch through the hole in the upper left rear of the trunk and secure with switch indicator/guard bracket, hex facenut and plastic facenut.
14. Reconnect the two black wires to the tank heater switch terminals.

SERVICE (cont.)**TANK HEATER SWITCH (cont.)**

15. Set tank assembly inside the hood on mounting brackets and secure with two #8-32 screws.
16. Reconnect the wires to the limit thermostat, tank heater and the control thermostat. Refer to limit thermostat, tank heater and control thermostat sections in this manual when reconnecting wires.
17. Brewers with faucet reinstall the faucet tube and reconnect the water supply tube to the coil assembly.
18. Secure the sprayhead tube to the hood using hex nut.
19. Install sprayhead.
20. Install fill basin, inlet gasket and secure to tank lid with tank inlet fitting.
21. Carefully install water fill tube into the back of the fill basin.
22. Reconnect and turn on the incoming water supply.
23. Refer to Fig. 15 when reconnecting the wires.



THERMAL CUT-OFF (Brewers W/Faucet)

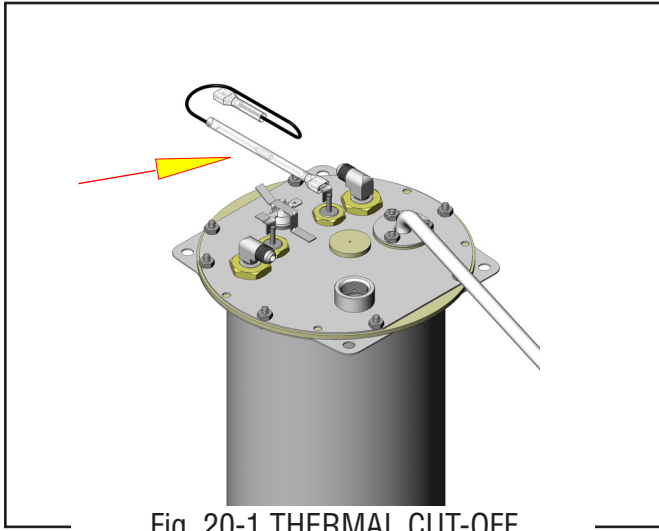


Fig. 20-1 THERMAL CUT-OFF

Location:

The thermal cut-off (TCO) is a thermal fuse located above the tank lid, connected to the tank heater.

NOTE: Installed only on tanks with coil faucet.

CE models have an additional TCO connected to the other heater terminal.

Test Procedures:

1. Disconnect the brewer from the power source.
2. Disconnect both ends of the TCO.
3. Check for continuity across TCO with an ohmmeter.

If continuity is present as described, the TCO is operating properly.

If continuity is not present as described, replace the TCO.

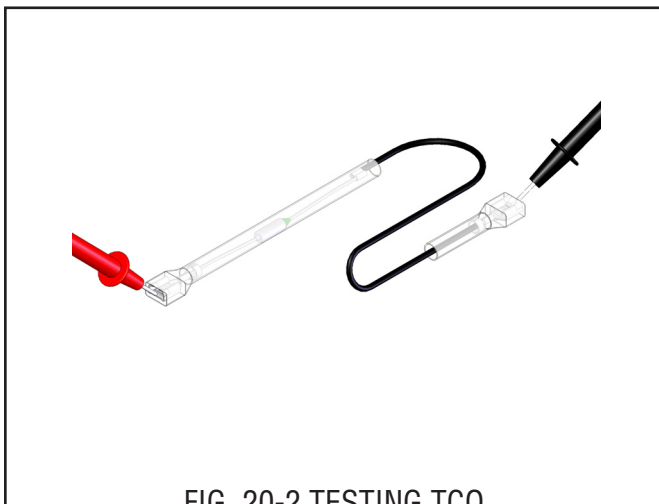


FIG. 20-2 TESTING TCO

Removal and Replacement:

1. Disconnect both ends of the TCO.
2. Install new thermal cut-off.
3. Refer to Fig. 17 when reconnecting wires.

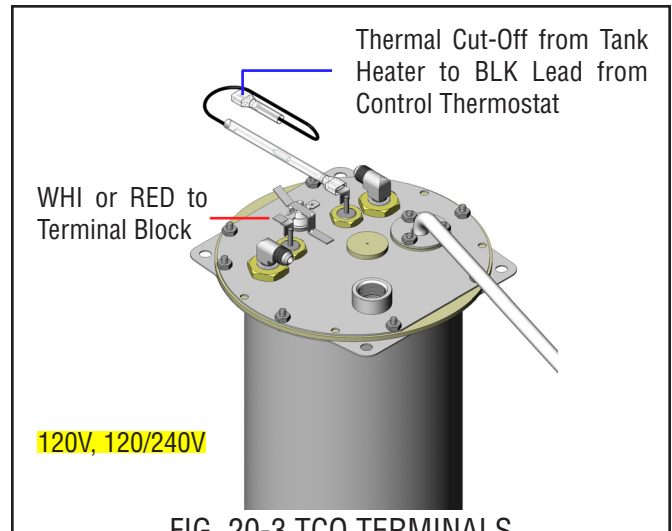


FIG. 20-3 TCO TERMINALS

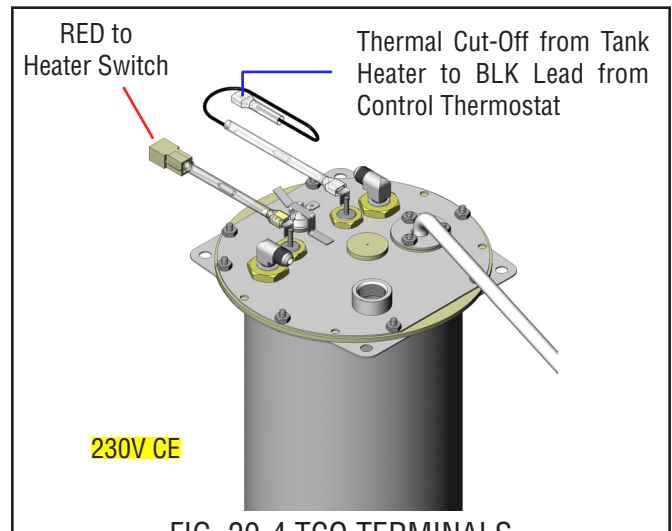


FIG. 20-4 TCO TERMINALS

SERVICE (cont.)**COIL/FAUCET****Location:**

The coil for the faucet is located in the tank.

Operation:

Water inside the coil is separate from the brewing water and is always under line pressure. Brewing water in the tank heats the submerged coil. Use of a coil faucet during a brew cycle will not cause short potting, but is limited to 8-10 ounces of hot water before the cooler water is passed through coil.

Removal and Replacement:

1. Disconnect the brewer from the power and water sources.
2. Turn and remove aerator assembly from bottom of faucet. Clean parts of any mineral buildup. Install new gasket when reassembling.
3. Remove the bonnet nut and remove handle assembly.
4. Remove the seat cup. Clean inside the faucet body and install new seat cup.

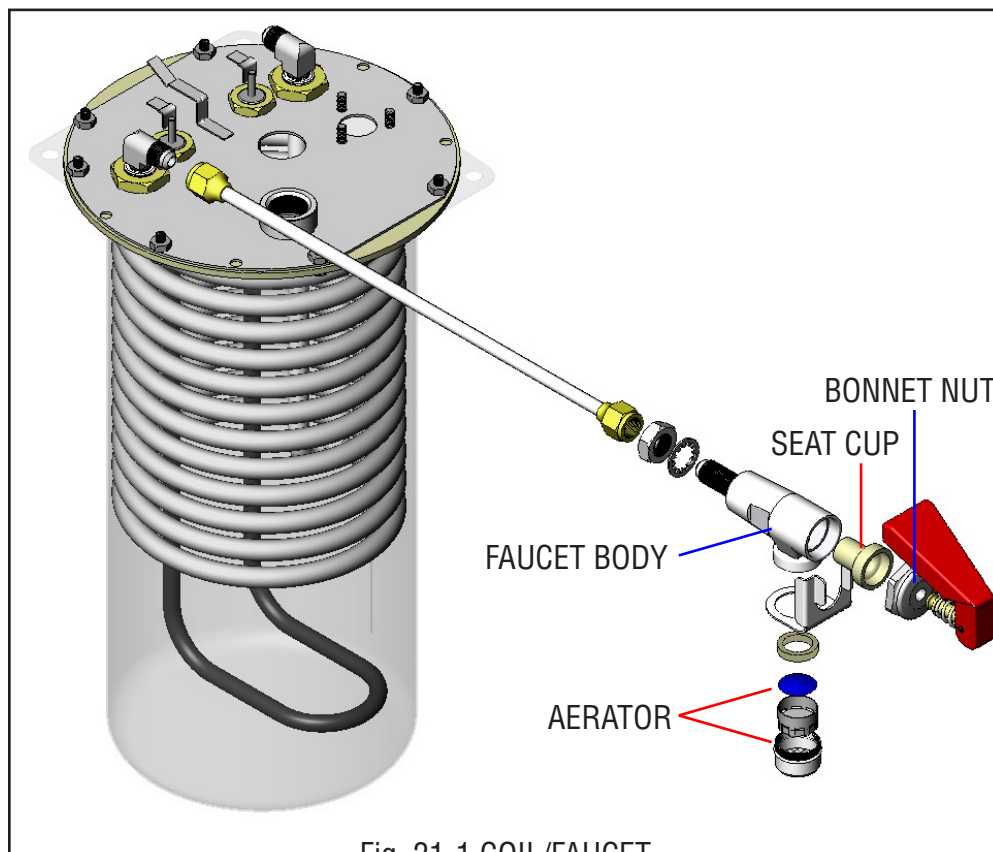


Fig. 21-1 COIL/FAUCET

Part II
SERVICE (cont.)
LIMIT THERMOSTAT

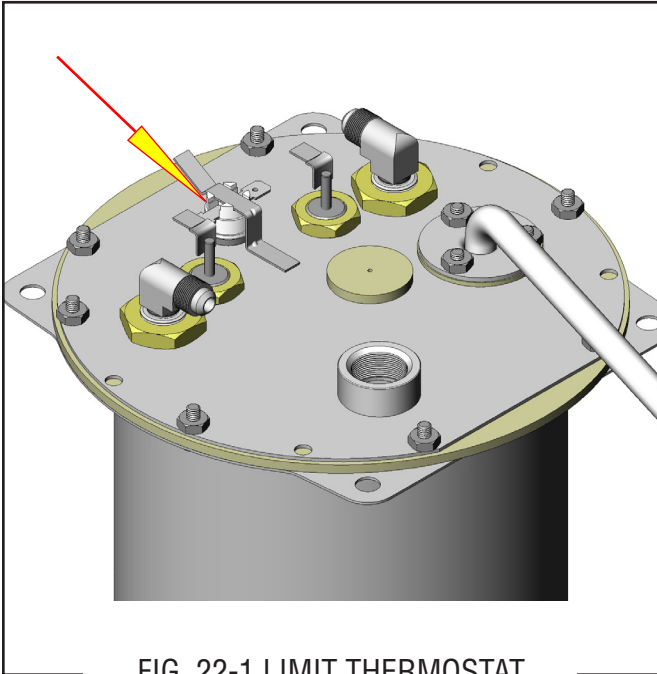


FIG. 22-1 LIMIT THERMOSTAT

Location:

___The limit thermostat is located inside the rear of the hood on the tank lid.

Test Procedures:

1. Disconnect the brewer from the power source.
2. Disconnect the blue and black wires from the limit thermostat.
3. Check for continuity across the limit thermostat terminals with a ohmmeter.

If continuity is present as described, the limit thermostat is operating properly.

If continuity is not present as described, replace the limit thermostat.

Removal and Replacement:

1. Remove all wires from limit thermostat terminals.
2. Carefully slide the limit thermostat out from under the retaining clip and remove limit thermostat.
3. Carefully slide the new limit thermostat into the retaining clip.
4. Refer to the Fig. 5 when reconnecting the wires.

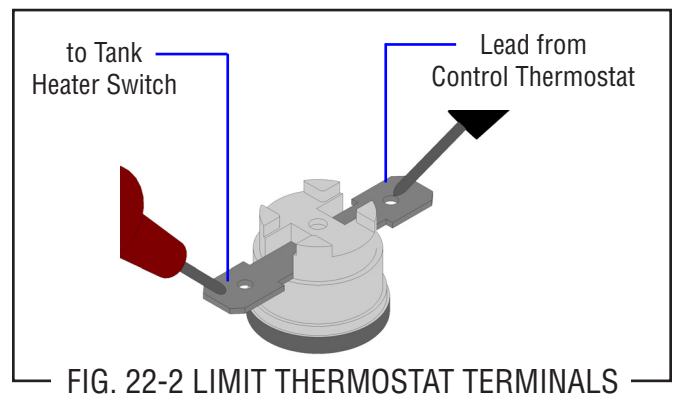


FIG. 22-2 LIMIT THERMOSTAT TERMINALS

RECOVERY BOOSTER RELAY (OPTIONAL)

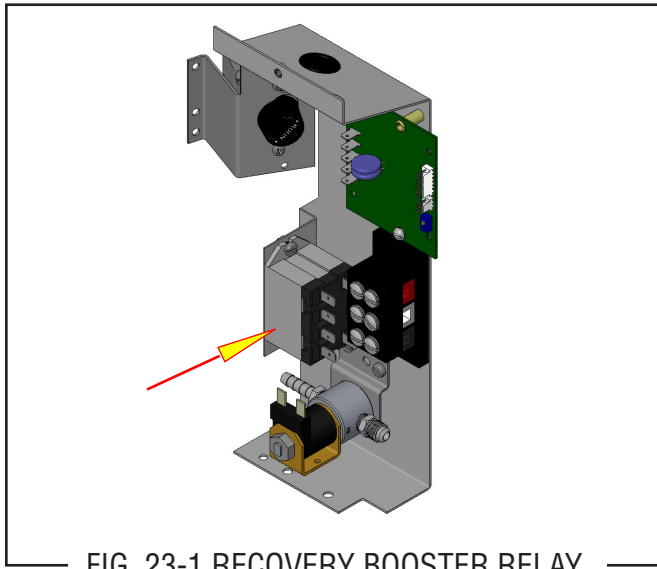


FIG. 23-1 RECOVERY BOOSTER RELAY

Location

The recovery booster(s) are located inside the trunk on the center of the component brackets just above the solenoid valve. The coil is activated by the timer/solenoid circuit. The contacts then close, bypassing the mechanical thermostat, thereby allowing faster heating of the incoming water in the tank.

Test Procedures

1. Disconnect the brewer from the power source.
2. Disconnect the white and black wires from the coil of the recovery booster relay.
3. With a voltmeter, check the voltage across the white and the black wires. Connect the brewer to the power source and initiate a brew cycle. The indication must be 120 volts ac.
4. Disconnect the brewer from the power source.

If voltage is present as described, proceed to #5.
If voltage is not present as described, refer to *Wiring Diagrams* and check the brewer wiring harness.

5. Check the resistance across the coil's terminals.

If resistance is present as described in FIG 9, reconnect the white and black wires to the coil.
If resistance is not present as described, replace the relay.

6. Disconnect the blue and black wires from the relay

contact terminals. Connect the brewer to the power source. With the "ON/OFF" switch in the "ON" position and the start switch pressed and released, check for continuity across relay terminals.

7. Disconnect the brewer from the power source.

If continuity is present as described, reconnect the blue and black wires to the relay contact terminals.
If continuity is not present as described replace the relay.

Removal and Replacement:

1. Remove all wires from the relay.
2. Remove the two #8-32 screws securing the relay mounting bracket to the component bracket. Remove relay bracket and relay as an assembly.
3. Remove the screw securing the relay to the relay mounting bracket.
4. Install new relay to the component bracket.
5. Refer to Fig. 9 when reconnecting the wires.

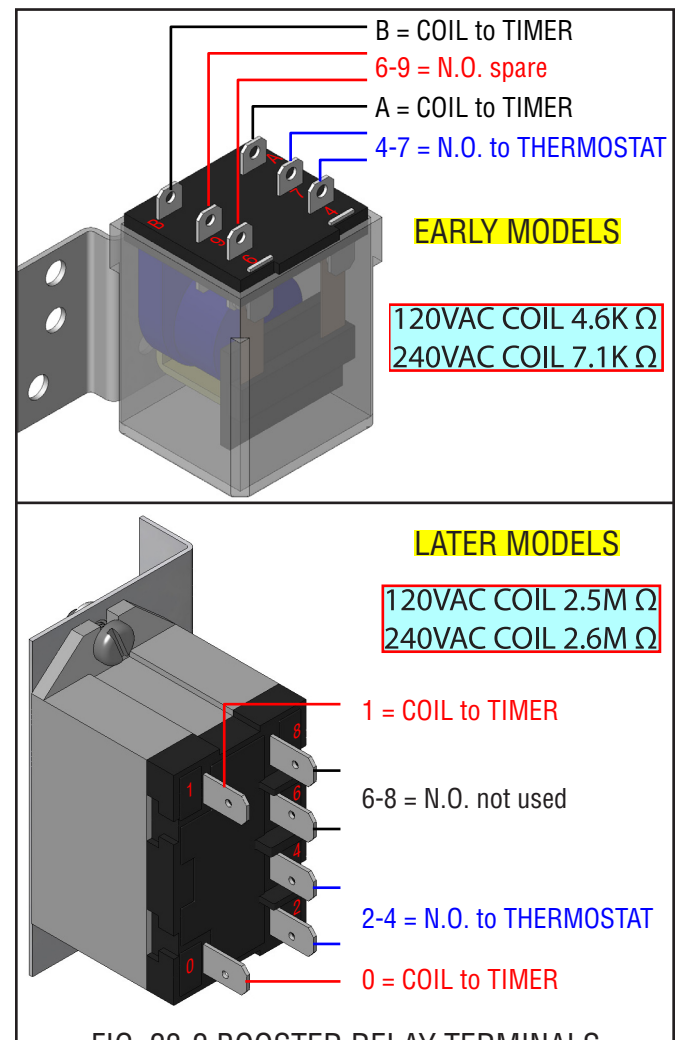


FIG. 23-2 BOOSTER RELAY TERMINALS

TIMER (Early Models)

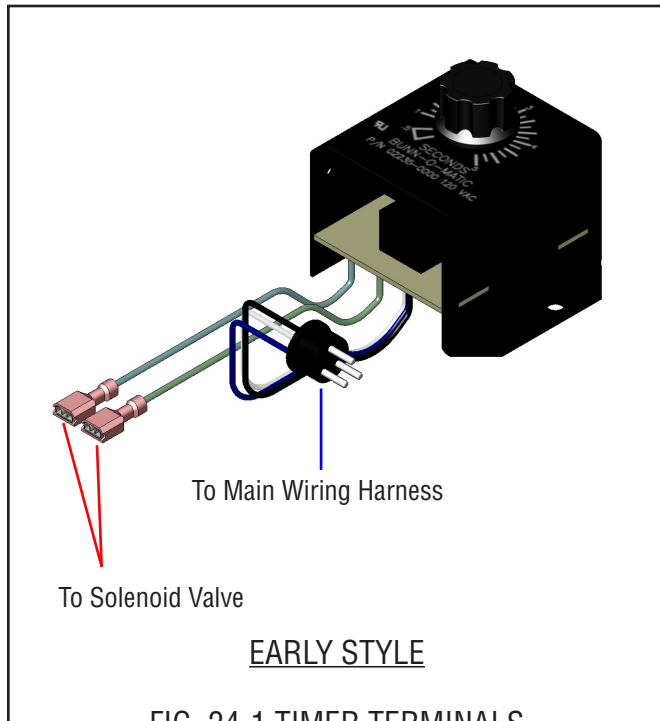


FIG. 24-1 TIMER TERMINALS

Location:

The timer is located inside the front of the trunk on the upper right side of component bracket.

Test Procedure.

1. Disconnect the brewer from the power source.
2. Disconnect the polarized, three pin connector from the brewer wiring harness.
3. With a voltmeter, check the voltage across sockets P2 & P3 (white and white/red wires) of the female connector when the "ON/OFF" switch is in the "ON" position (upper). Connect the brewer to the power source. The indication must be:
 - a) 120 volts ac for two wire 120 volt models and three wire 120/240 volt models.
 - b) 200 to 240 volts ac on two wire 200 volt or 240 volt models.
4. Disconnect the brewer from the power source.

If voltage is present as described, proceed to #5.
If voltage is not present as described, refer to the Wiring Diagrams and check the brewer wiring harness.

5. Check the voltage across the sockets P1 & P2 (blue and white wires) of the female connector with a voltmeter when the "ON/OFF" switch is in the "ON" position (upper) and start switch pressed.

Connect the brewer to the power source. The indication must be:

- a) 120 volts ac for two wire 120 volt models and three wire 120/240 volt models.
 - b) 200 to 240 volts ac for two wire 200 volt or 240 volt models.
6. Disconnect the brewer from the power source.
 7. Reconnect the three pin connector from main wiring harness to the timer.

If voltage is present as described, proceed to #8
If voltage is not present as described, refer to Wiring Diagrams and check the start switch and brewer wiring harness.

8. With a voltmeter, check the voltage across the black and white wires when the "ON/OFF" switch is in the "ON" position (upper) and the "START" switch is pressed to the "START" position and released. Connect the brewer to the power source. The indication must be:
 - a) 120 volts ac for approximately 20 seconds for two wire 120 volt models and three wire 120/240 volt models.
 - b) 200 to 240 volts ac for approximately 20 seconds for two wire 200 volt or 240 volt models.

If voltage is present as described, the brew timer is operating properly. Reconnect the polarized, three pin connector.

If voltage is not present as described, replace the timer.

Removal and Replacement:

1. Separate all connectors between the brewer wiring harness and the timer.
2. Remove the one #8-32 screw securing timer to component bracket.
3. Install new timer circuit board as described in Late Model Timer section on the following pages.
4. Refer to Fig. 21 when reconnecting the wires.
5. Install the Timer Setting decal provided with the replacement timer kit, below the schematic on the inside of the front access panel.
6. Adjust the timer as required. Refer to Late Model Timer section on the following pages.

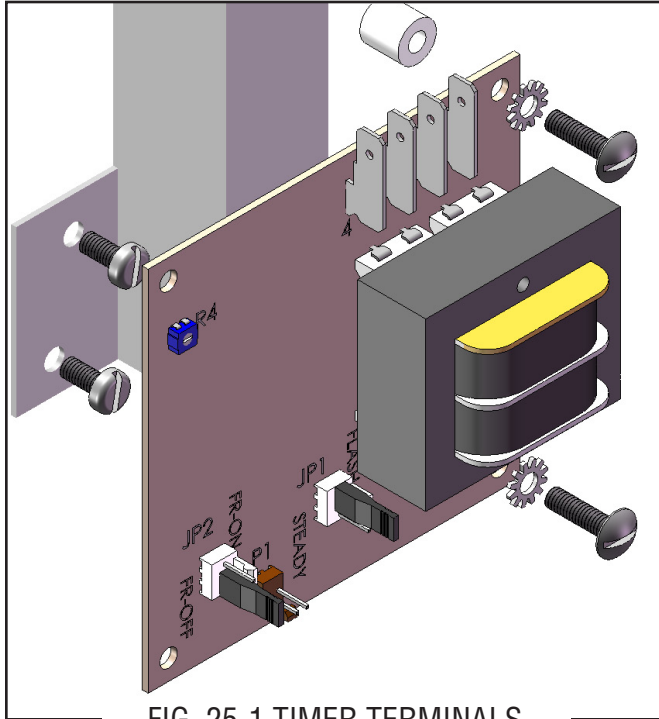
SERVICE (cont.)**FRESHNESS TIMER (Early Models)**

FIG. 25-1 TIMER TERMINALS

Location:

The freshness timer is located inside the front of the trunk on the component bracket.

Operation:

The freshness timer activates an LED on the control panel after a predetermined amount of time (after the brew cycle) to indicate carafe on warmer too long.

Settings: Default settings underlined

JP1: Choose between flashing LED or steady.

JP2: Choose whether the LED stays ON, then turns off; or is off, then turns on at the end of delay.

R4: Delay time adjustment, 20-60 minutes.

Test Procedure.

1. Disconnect the brewer from the power source.
2. With a voltmeter, check the voltage across T1 & T2 (black & white wires) of the fresh timer. Connect the brewer to the power source. The indication must be:
 - a) 120 volts ac for two wire 120 volt models and three wire 120/240 volt models.
 - b) 200 to 240 volts ac on two wire 200 volt or 240 volt models.
3. Disconnect the brewer from the power source.

If voltage is present as described, proceed to #4. If voltage is not present as described, refer to the Wiring Diagrams and check the brewer wiring harness.

4. Check the voltage across the T3 and T4 (white/orange and white/blue wires) of the fresh timer with a voltmeter when the "ON/OFF" switch is in the "ON" position (upper) and start switch pressed. Connect the brewer to the power source. The indication must be: (when solenoid is activated)
 - a) 120 volts ac for two wire 120 volt models and three wire 120/240 volt models.
 - b) 200 to 240 volts ac for two wire 200 volt or 240 volt models.
5. Disconnect the brewer from the power source.
6. Reconnect the three pin connector from main wiring harness to the timer.

If voltage is present as described, proceed to #7

If voltage is not present as described, refer to Wiring Diagrams and check the start switch and brewer wiring harness.

7. With a voltmeter, check the voltage across connector P1 after the delay period (JP1 set to "STEADY", and JP2 set to "ON"). The indication must be: 3-5 volts dc (when solenoid is activated).

If voltage is present as described, the fresh timer is operating properly. If voltage is not present as described, replace the timer. NOTE: The freshness timer is no longer available.

Removal and Replacement:

1. Disconnect the brewer from the power source.
2. Disconnect all four connectors from the timer.
2. Remove the two #8-32 screws securing timer to component bracket.
6. Adjust the timer as required. Refer to Late Model Timer section on the following pages.

DIGITAL BREW TIMER (Late Models)

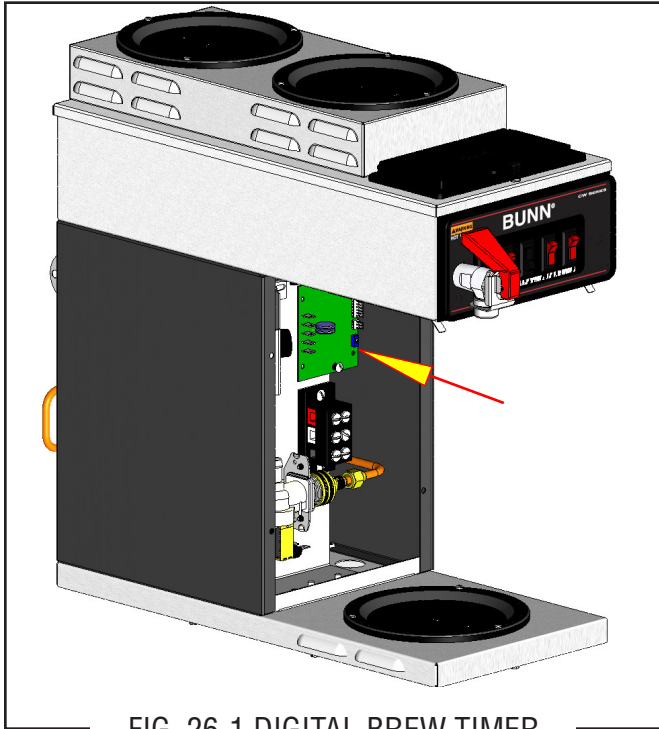


FIG. 26-1 DIGITAL BREW TIMER

Location:

The timer is located inside the front of the trunk on the upper right side of component bracket.

Test Procedure

NOTE: Do not remove or install wires while timer board is installed. *Pressure applied to one side may cause damage to the board.*

1. Disconnect the brewer from the power source and remove the front access panel.
2. With a voltmeter, check the supply voltage across terminals TL1 and TL2 when the "ON/OFF" switch is in the "ON" position. Connect the brewer to the power source. The indication must be:
 - a) 120 volts ac for two wire 120 volt models and three wire 120/240 volt models.
 - b) 200 to 240 volts ac on two wire 200 volt or 240 volt models.
3. Disconnect the brewer from the power source.

If voltage is present as described, proceed to #4.

If voltage is not present as described, refer to the *Wiring Diagrams* and check the wiring harness.

4. With a voltmeter, check the output voltage across terminals TL2 and TL4 when the "ON/OFF" switch is in the "ON" position. Connect the brewer to the power source and press the "START" switch. The indication must be as follows:
 - a) 120 volts ac for two wire 120 volt models and three wire 120/240 volt models.
 - b) 200 to 240 volts ac for two wire 200 volt or 240 volt models.

If voltage is present as described, the timer is operating properly. Reset the timer as required, to obtain the desired brew volume.

If voltage is not present as described, proceed to #6.

6. With a voltmeter, check the input start voltage across terminals TL2 and TL5 when the "ON/OFF" switch is in the "ON" position. Connect the brewer to the power source and press the "START" switch. The indication must be as follows:
 - a) 120 volts ac for two wire 120 volt models and three wire 120/240 volt models.
 - b) 200 to 240 volts ac on two wire 200 volt or 240 volt models.

If voltage is not present as described, refer to the *Wiring Diagrams* and check the wiring harness to the start switch.

If voltage is present as described, disconnect the brewer from the power source and replace the timer.

Removal and Replacement:

1. Remove the two #8-32 screws securing circuit board to the mounting bracket.
2. Remove circuit board and spacers (as required).
3. Remove all wires from the timer.
4. Attach all wires to the replacement timer board prior to installation to the component mounting bracket. Refer to FIG. 21 when reconnecting the wires.
5. Install new circuit board with spacers (as required) to the component mounting bracket.
6. Adjust the timer as described in the next section.

SERVICE (cont.)**DIGITAL BREW TIMER (Late Models)(cont.)**Timer Setting:

NOTE: Prior to setting or modifying volumes, check that the brewer is connected to water supply, the tank is properly filled, and a funnel and server are in place.

NOTE: All volume settings must be done with the sprayhead installed.

1. **Modifying brew volumes.** To modify a brew volume, first check that the SET/LOCK switch is in the “SET” position on the circuit board.

To increase a brew volume, place the ON/OFF switch in the “ON” position, press and hold the START switch until three clicks are heard. Release the switch and press it again one or more times. (Failure to release the switch within two seconds after the third click causes the volume setting to be aborted and previous volume setting will remain in memory) Each time the switch is pressed, two seconds are added to the brew time period. Allow the brew cycle to finish in order to verify that the desired volume has been achieved.

To decrease a brew volume, place the ON/OFF switch in the “ON” position, press and release the START switch once for every two-second interval to be removed from the total brew time period; then immediately press and hold down the START switch until three clicks are heard. Release the switch. (Failure to release the switch within two seconds after the third click causes the volume setting to be aborted and previous volume setting will remain in memory). Allow the brew cycle to finish in order to verify that the desired volume has been achieved.

2. **Setting brew volumes.** To set a brew volume, first check that the SET/LOCK switch is in the “SET” position on the circuit board. Place the ON/OFF switch in the “ON” position, press and hold the START switch until three distinct clicks are heard and then release the switch. (Failure to release the switch within two seconds after the third click causes the volume setting to be aborted and previous volume setting will remain in memory.

View the level of the liquid being dispensed. When the desired level is reached, turn the ON/OFF switch to “OFF”.

NOTE: Several ounces of water will continue to syphon from the tank after turning the switch “OFF”. The brewer remembers this volume and will continue to brew batches of this size until the volume setting procedure is repeated.

NOTE: When brewing coffee, volume will decrease due to absorption by the coffee grounds.

3. **Setting programming disable feature.** If it becomes necessary to prevent anyone from changing brew time once programmed, you can set the SET/LOCK switch to the “LOCK” position. This will prevent any further programming until switch is once again put into the “SET” position.

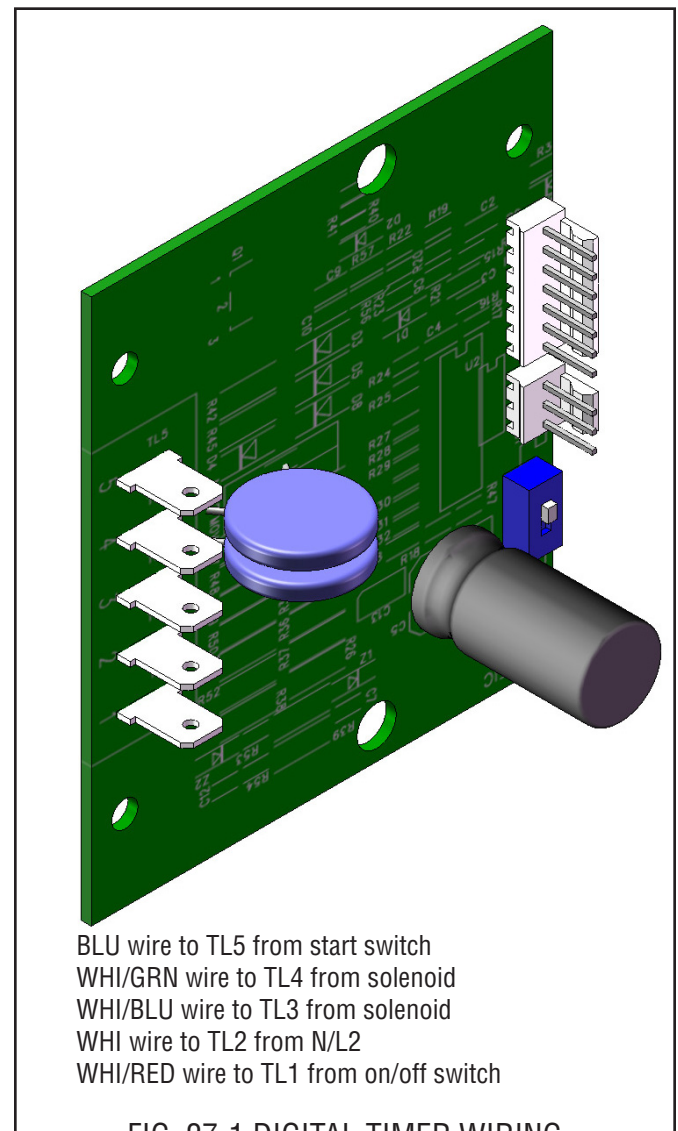


FIG. 27-1 DIGITAL TIMER WIRING

WARMER ELEMENT(S)

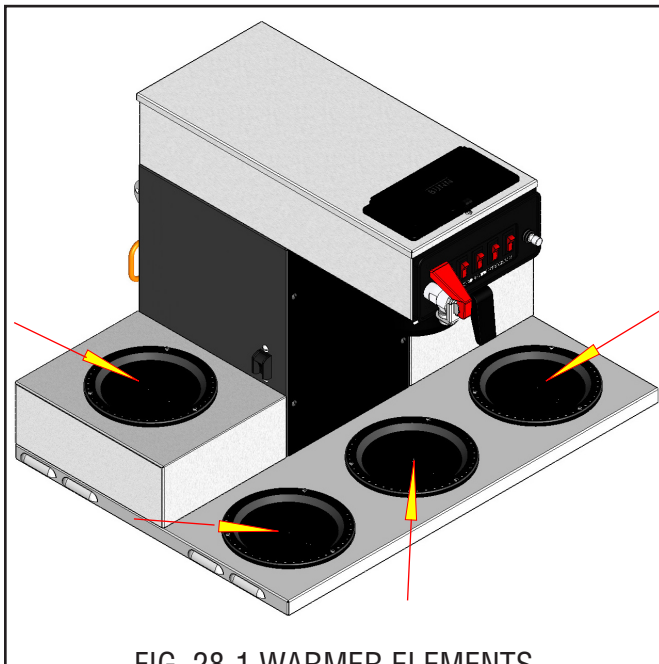


FIG. 28-1 WARMER ELEMENTS

Location:

The warmer element(s) is located under the warmer plate.

Test Procedures:

1. Disconnect the brewer from the power source.
2. With a voltmeter, check voltage across the two wires at the warmer element with the "ON/OFF" switch in the "ON" position. Connect the brewer to the power source. The indication must be 120 volts ac for two wire 120 volt models and three wire 120/208 and 120/240 volt models, or 230 volts ac for two wire 230 volt models.
3. Disconnect the brewer from the power source.

If voltage is present as described, proceed to #4.
If voltage is not present as described, refer to Wiring Diagrams and check wiring harness.

WARMER	RESISTANCE
100W-120V	132 Ω - 152 Ω
100W-220V	450 Ω - 532 Ω
100W-200V	372 Ω - 432 Ω
TERMINAL TO SHEATH - INFINITE (OPEN)	

FIG. 28-2 WARMER ELEMENTS

4. Check the resistance across the two terminals on the warmer element. NOTE: There should be no resistance reading between the heater sheath and either terminal. Refer to the following chart.

If resistance is to specification, reconnect the two wires to the warmer element.

If resistance is not to specification, replace the warmer element.

Removal and Replacement:

1. Remove the three #4-40 screws securing the warmer assembly to the brewer.
2. Lift the warmer assembly from the brewer.
3. Disconnect the two wires from the warmer element terminals.
4. Remove the two #8-32 nuts securing the warmer element to the warmer plate.
5. Securely install new warmer element.
6. Reconnect the two wires to warmer element terminals.
7. Securely install warmer assembly on the brewer.

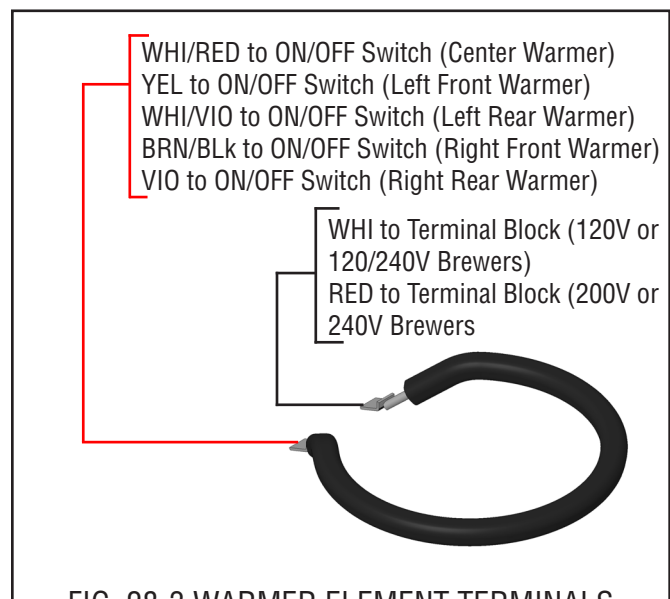
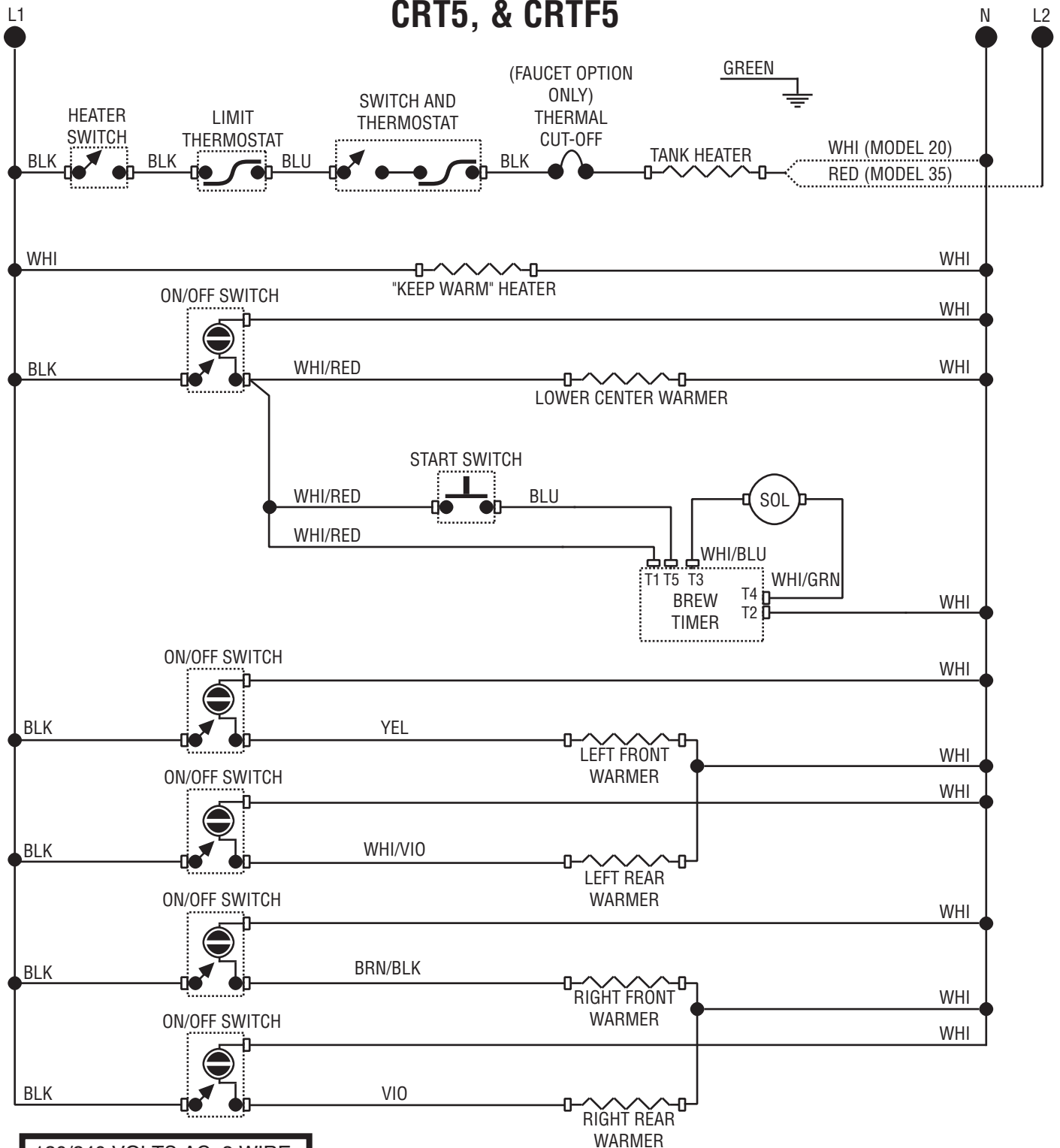


FIG. 28-3 WARMER ELEMENT TERMINALS

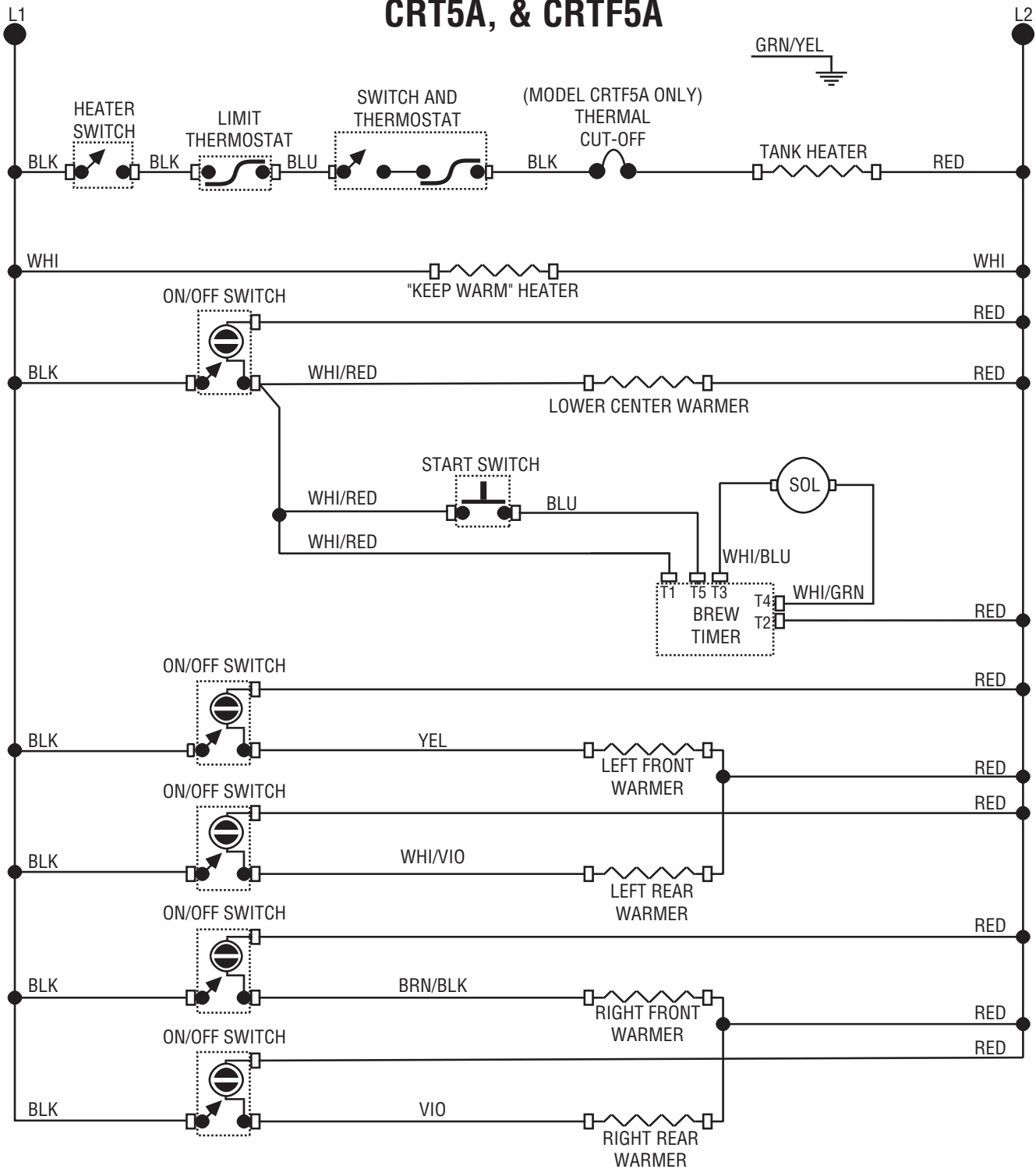
SCHEMATIC WIRING DIAGRAM CRT5, & CRTF5



120/240 VOLTS AC 3 WIRE
120 VOLTS AC 2 WIRE
SINGLE PHASE

10476.0000G 07/03 © 1990 BUNN-O-MATIC CORPORATION

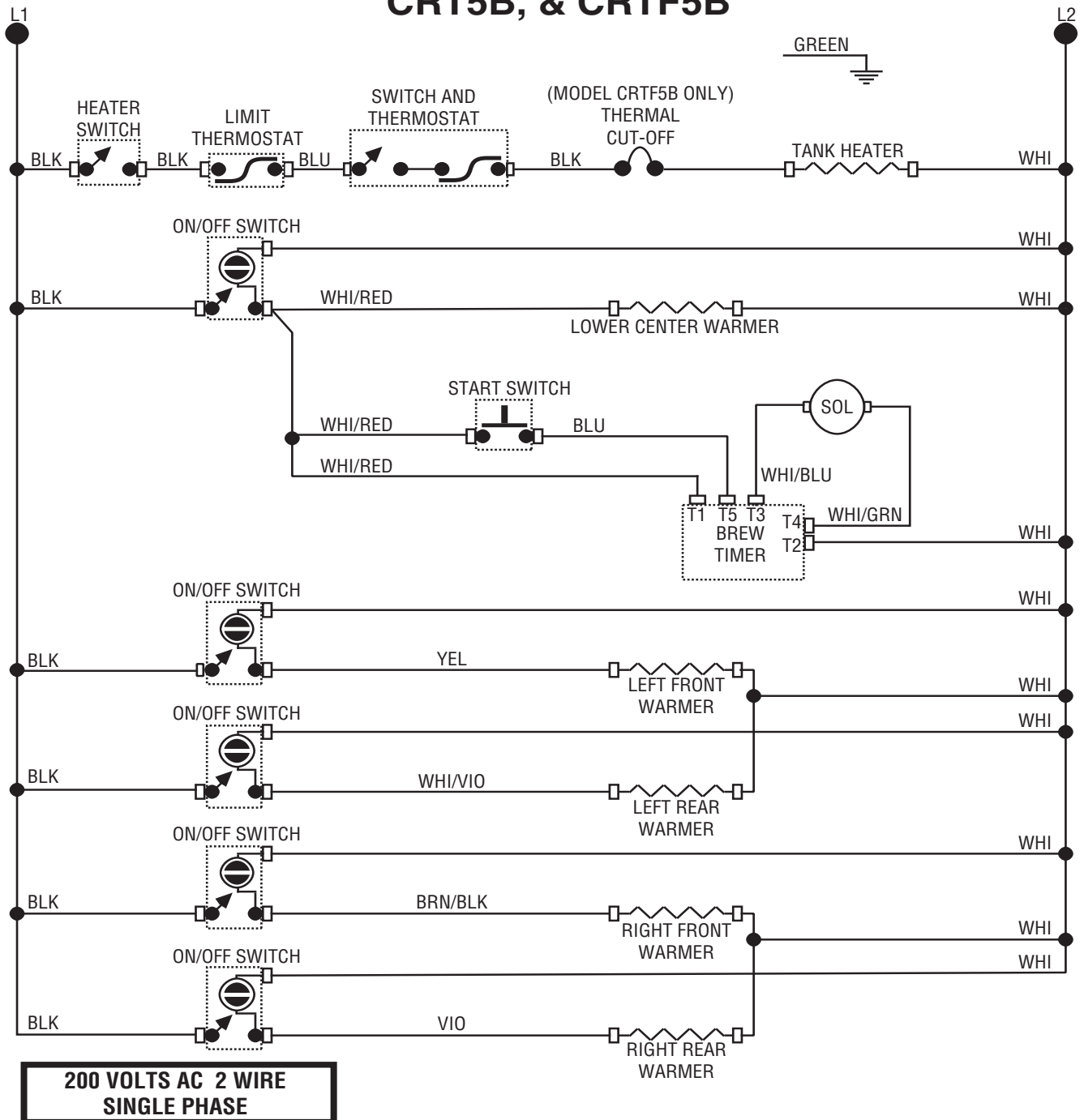
SCHEMATIC WIRING DIAGRAM CRT5A, & CRTF5A



**240 VOLTS AC 2 WIRE
SINGLE PHASE**

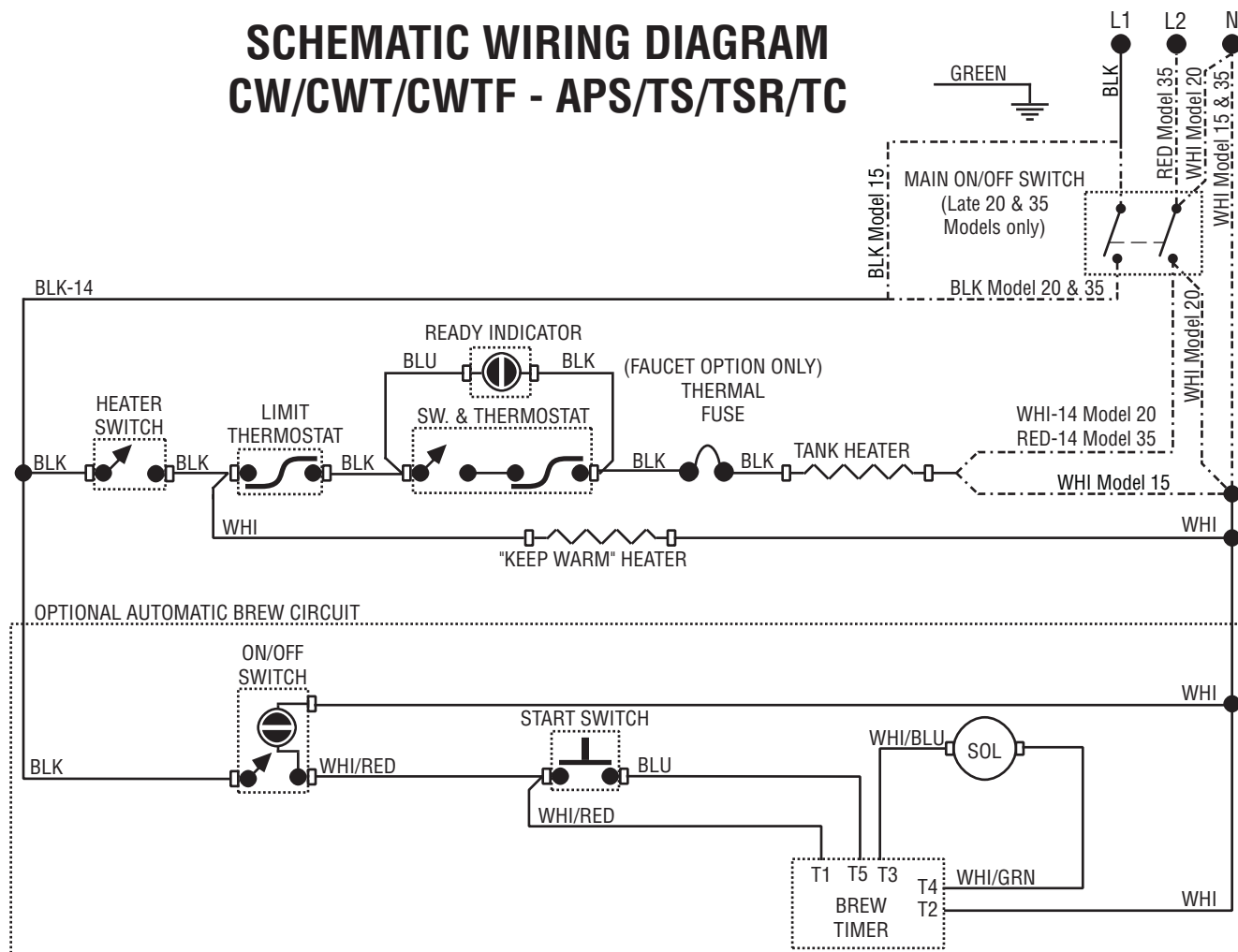
10477.0000H 07/03 © 1990 BUNN-O-MATIC CORPORATION

SCHEMATIC WIRING DIAGRAM CRT5B, & CRTF5B



10477.0001H 07/03 © 1993 BUNN-O-MATIC CORPORATION

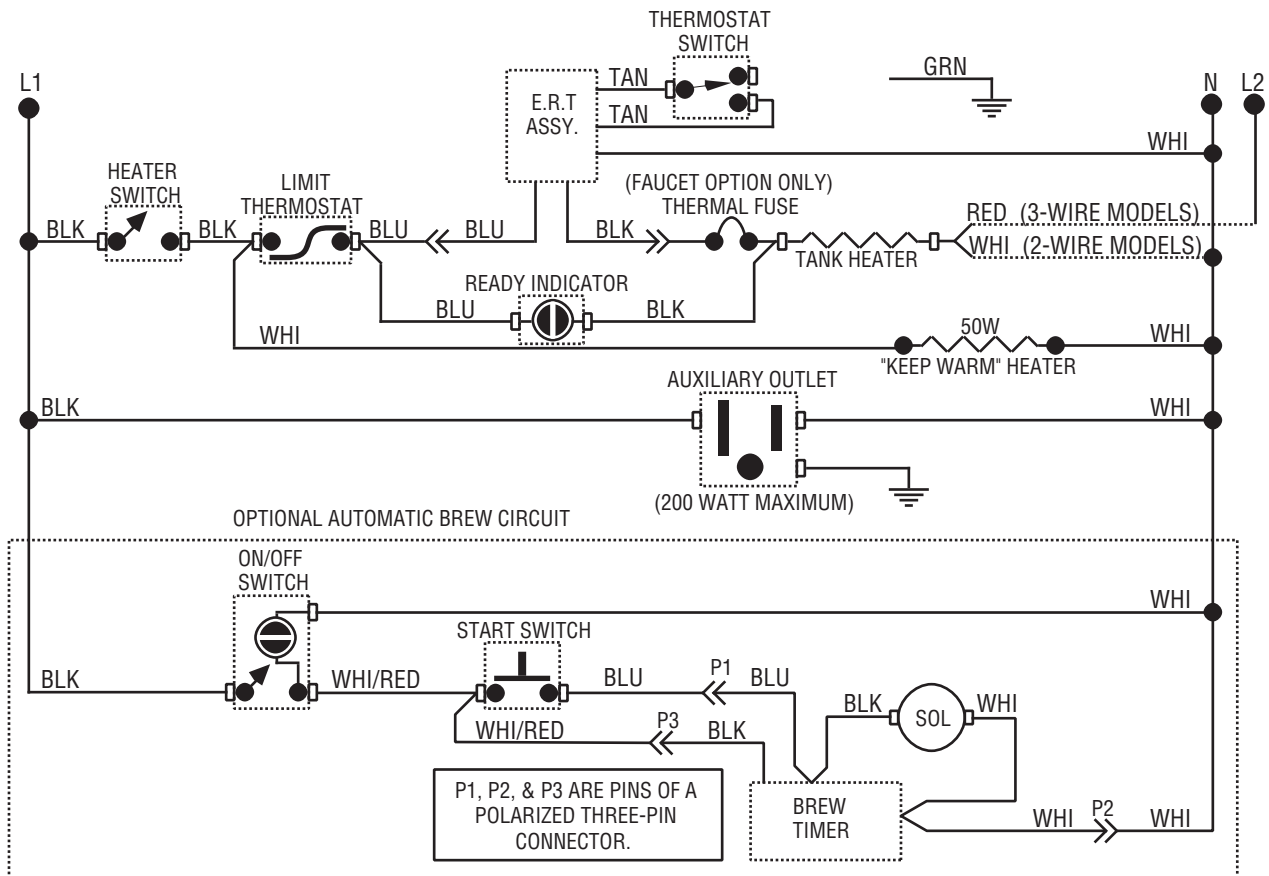
SCHEMATIC WIRING DIAGRAM CW/CWT/CWTF - APS/TS/TSR/TC



120/240 VOLTS AC 3 WIRE
120 VOLTS AC 2 WIRE
SINGLE PHASE

10693.0000G 02/07 © 1993 BUNN-O-MATIC CORPORATION

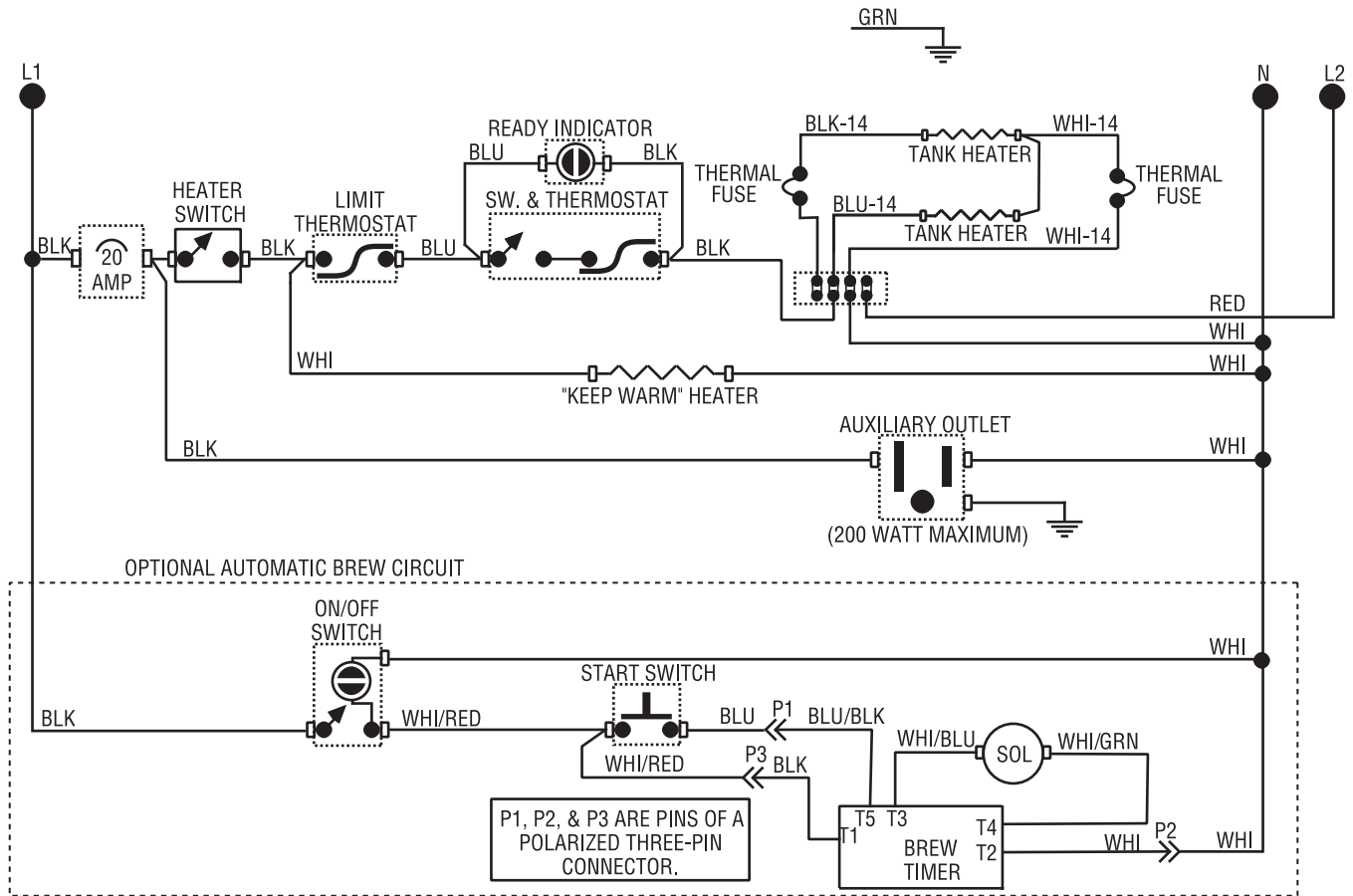
SCHEMATIC WIRING DIAGRAM CW-TS & CW-APS ERT



120/240 VOLTS AC 3 WIRE
120 VOLTS AC 2 WIRE
SINGLE PHASE

10693.0001C 9/96 © 1996 BUNN-O-MATIC CORPORATION

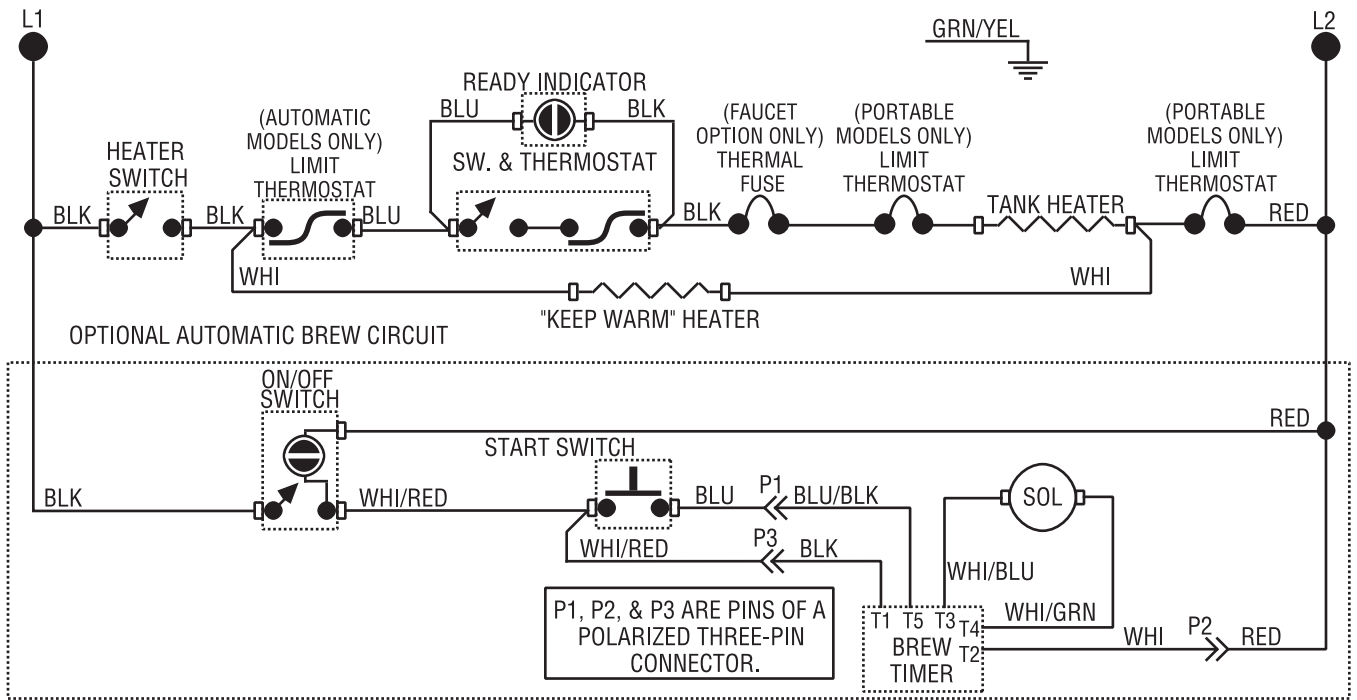
SCHEMATIC WIRING DIAGRAM FOR CWT-APS MV, CWTF-APS MV, CWTF-TS MV, CWTF-TSR MV



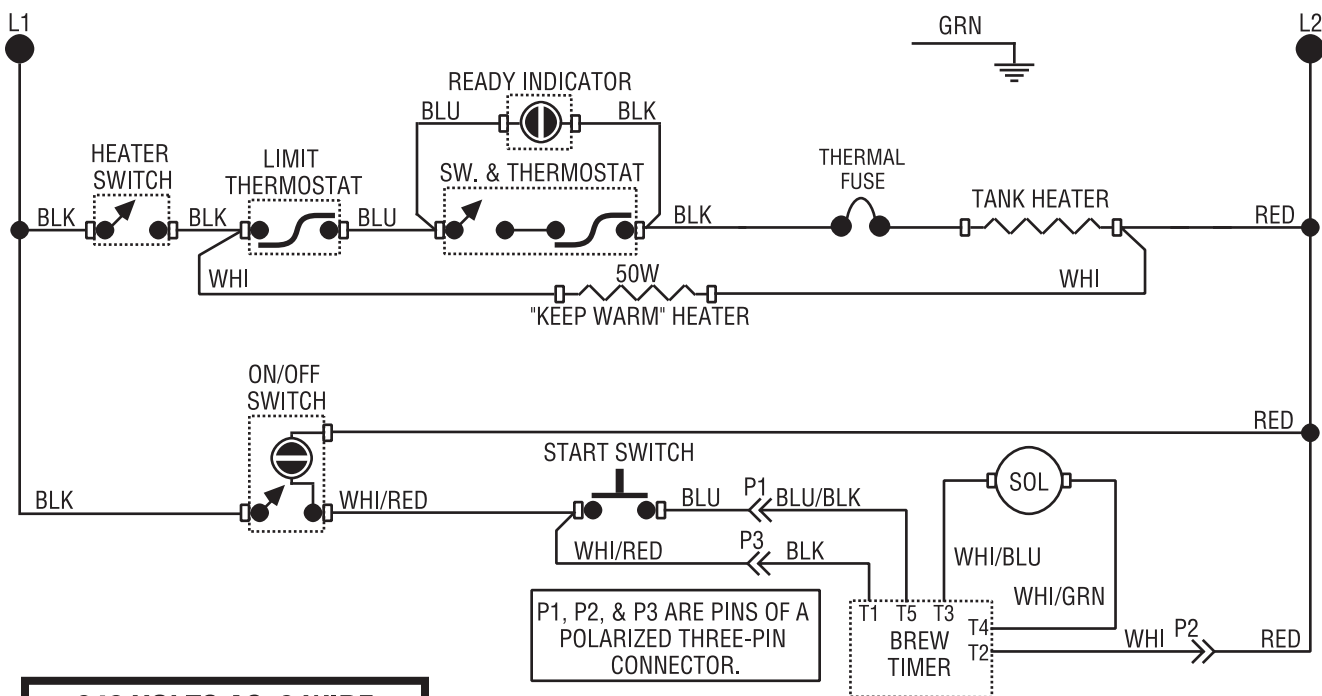
120/208 VOLTS AC 3 WIRE
120/240 VOLTS AC 3 WIRE
120 VOLTS AC 2 WIRE
SINGLE PHASE

10693.0002E 8/00 © 1998 BUNN-O-MATIC CORPORATION

SCHEMATIC WIRING DIAGRAM FOR MODELS CWA, CWTA, CWTFA - APS, TS, TSR



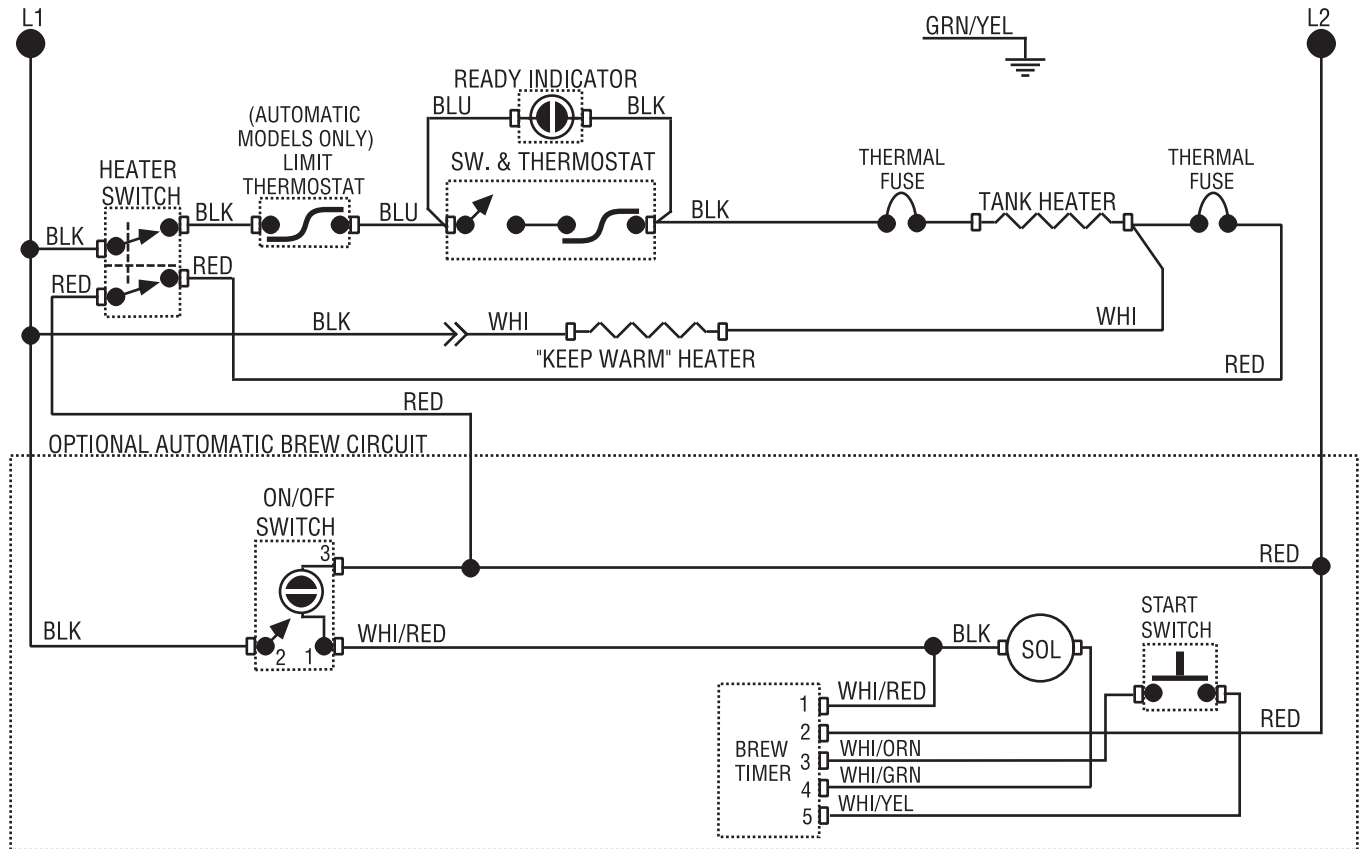
SCHEMATIC WIRING DIAGRAM CWTF-TSR



**240 VOLTS AC 2 WIRE
SINGLE PHASE**

10694.0001C 6/00 © 1996 BUNN-O-MATIC CORPORATION

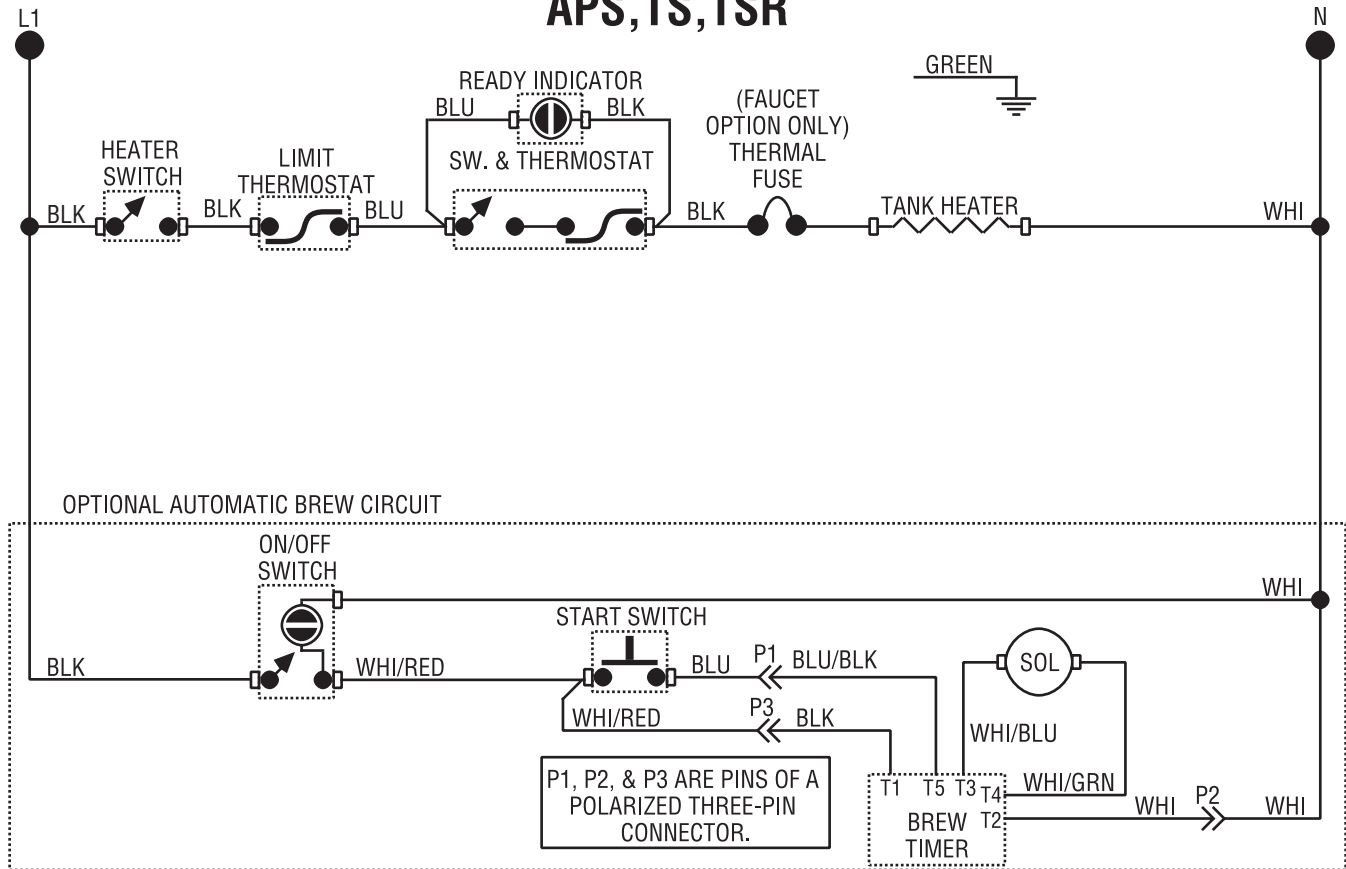
SCHEMATIC WIRING DIAGRAM FOR MODELS CWA, CWTA, CWTF - APS, TS



**230-240 VOLTS AC 2 WIRE
SINGLE PHASE**

10694.0002E 7/98 © 1997 BUNN-O-MATIC CORPORATION

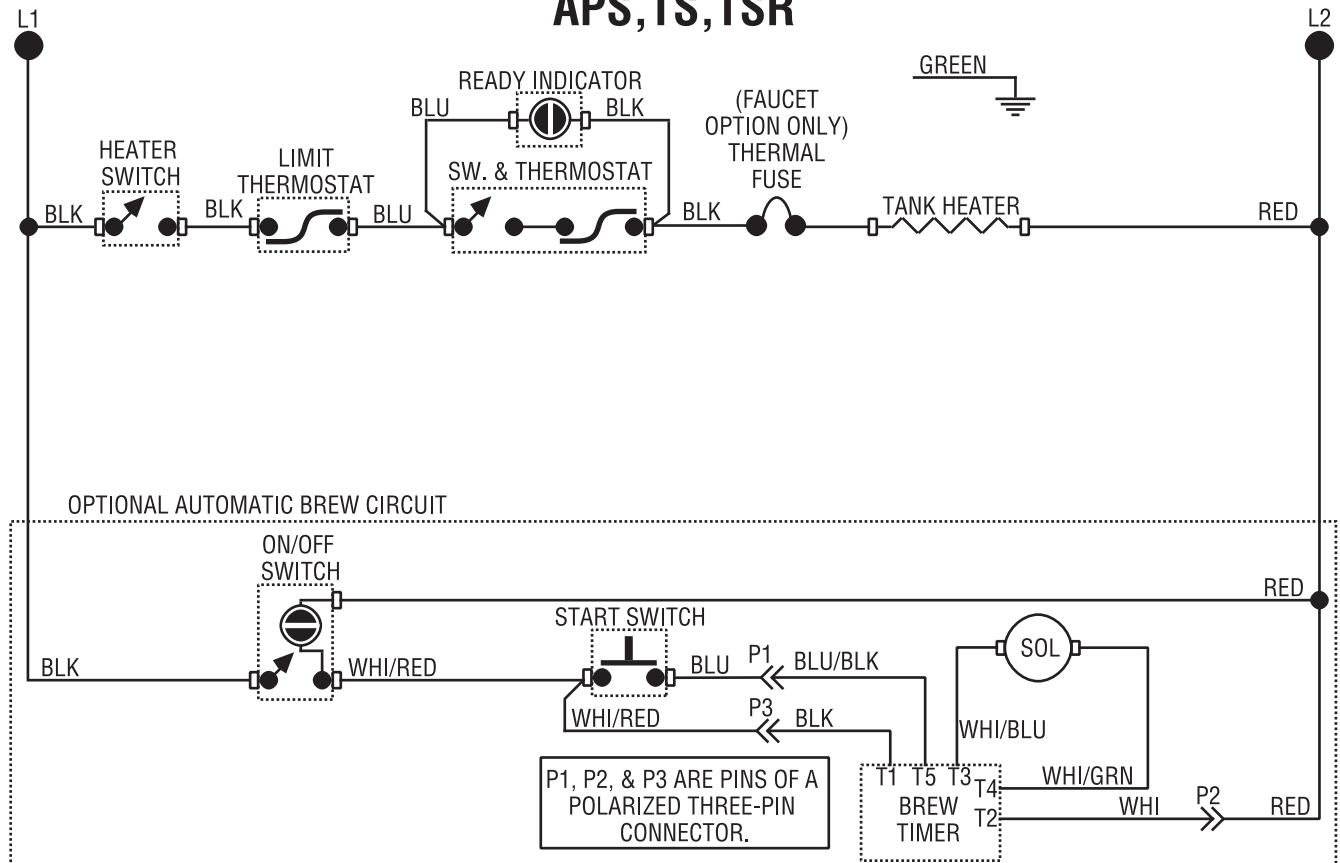
SCHEMATIC WIRING DIAGRAM FOR CWB, CWTB, CWTFB - APS,TS,TSR



**100 VOLTS AC 2 WIRE
SINGLE PHASE**

10695.0000C 6/00 © 1996 BUNN-O-MATIC CORPORATION

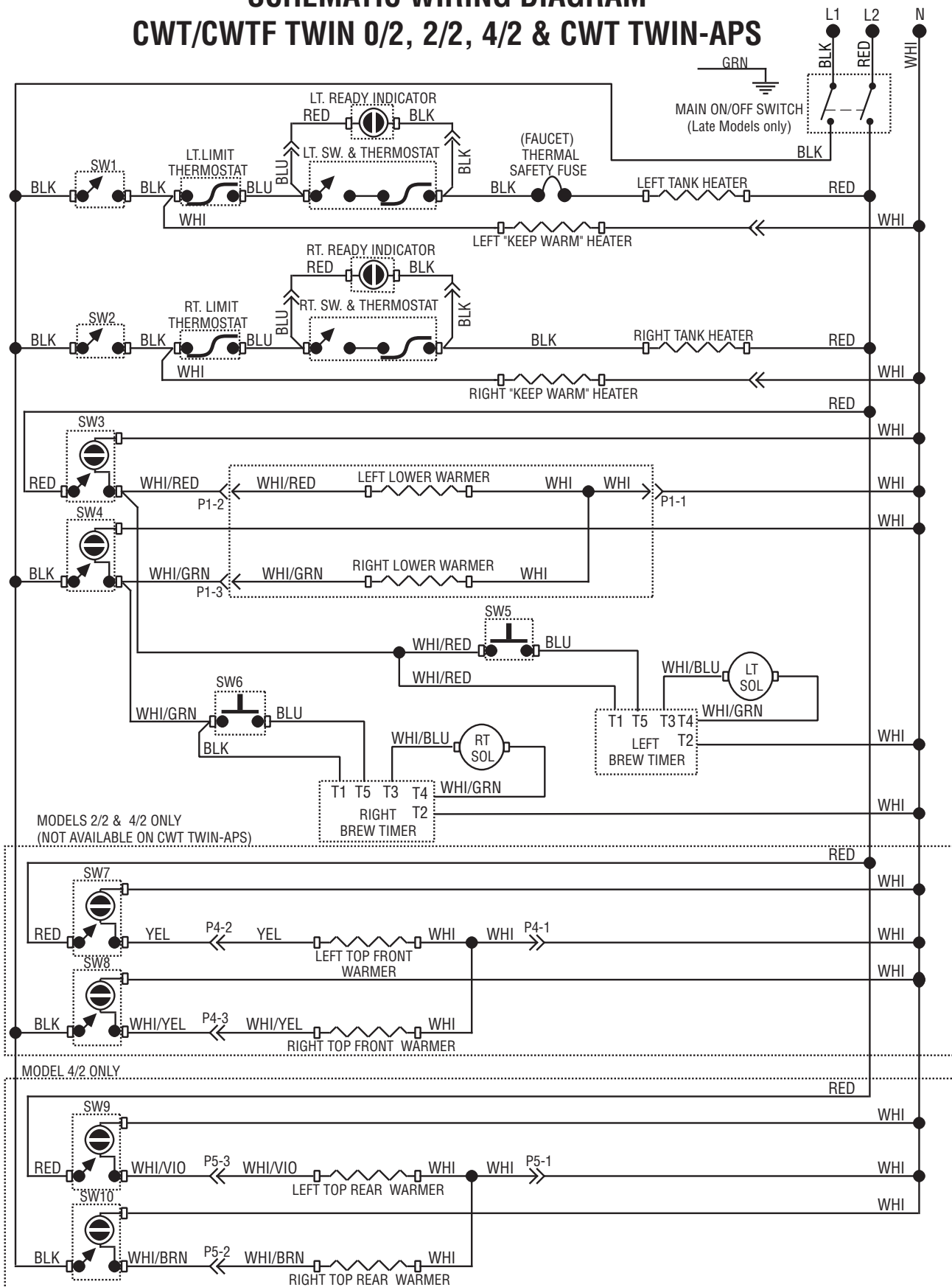
SCHEMATIC WIRING DIAGRAM FOR CWB, CWTB, CWTFB - APS,TS,TSR



**200 VOLTS AC 2 WIRE
SINGLE PHASE**

10696.0000B 6/00 © 1996 BUNN-O-MATIC CORPORATION

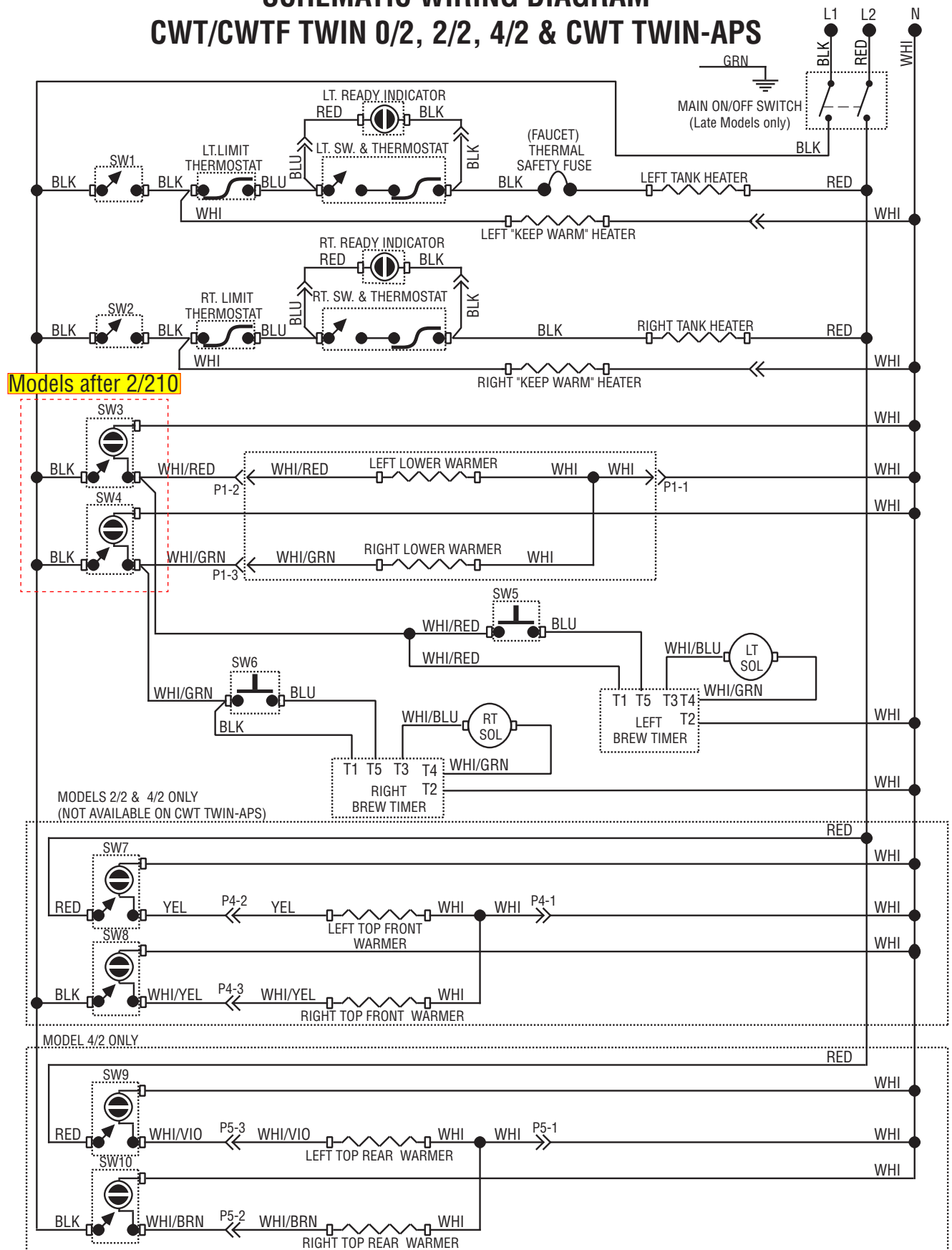
SCHEMATIC WIRING DIAGRAM CWT/CWTF TWIN 0/2, 2/2, 4/2 & CWT TWIN-APS



**120/240 VOLTS AC
3 WIRE + GND
SINGLE PHASE**

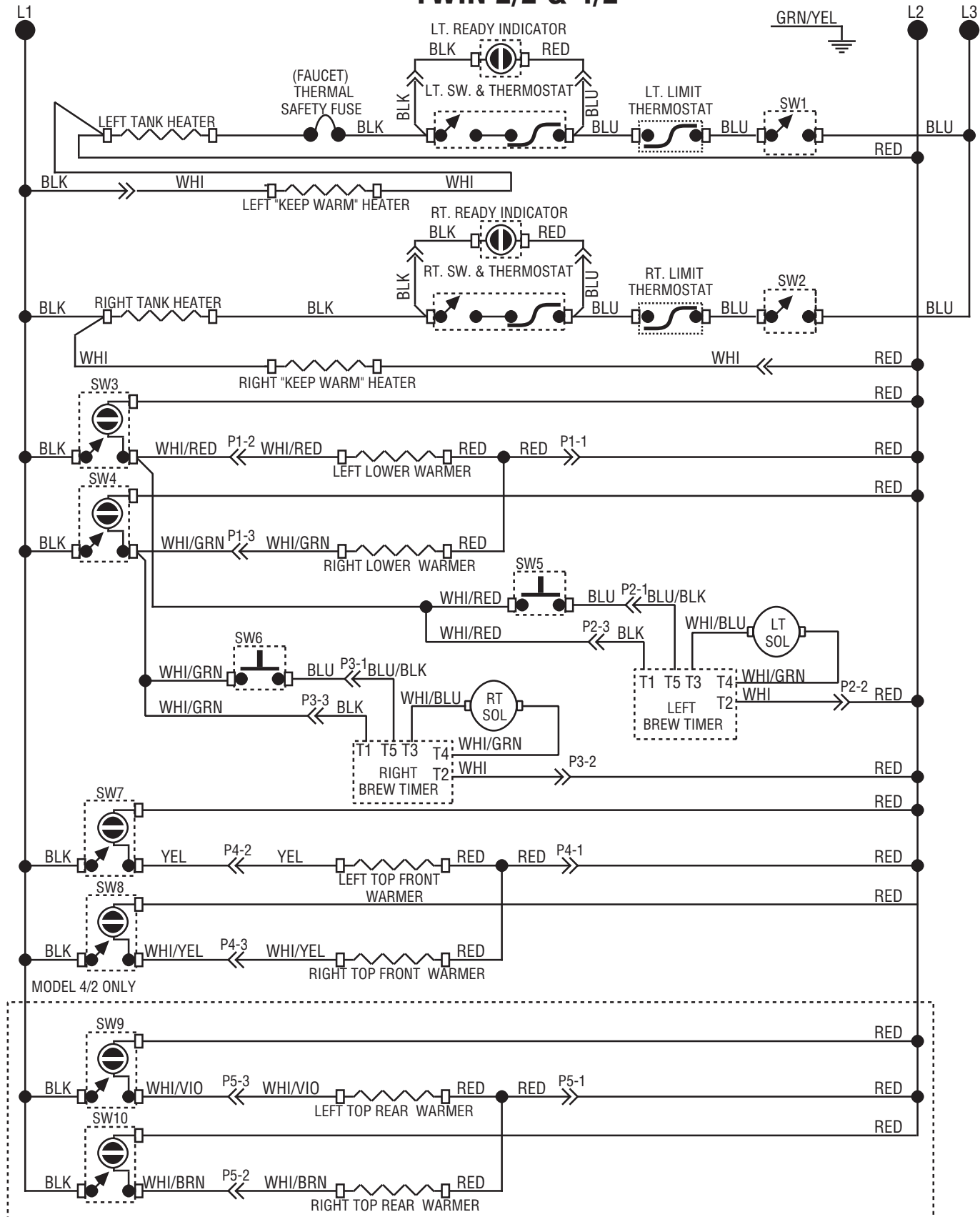
10736.0000L 03/07 © 1993 BUNN-O-MATIC CORPORATION

SCHEMATIC WIRING DIAGRAM CWT/CWTF TWIN 0/2, 2/2, 4/2 & CWT TWIN-APS



**120/240 VOLTS AC
3 WIRE + GND
SINGLE PHASE**

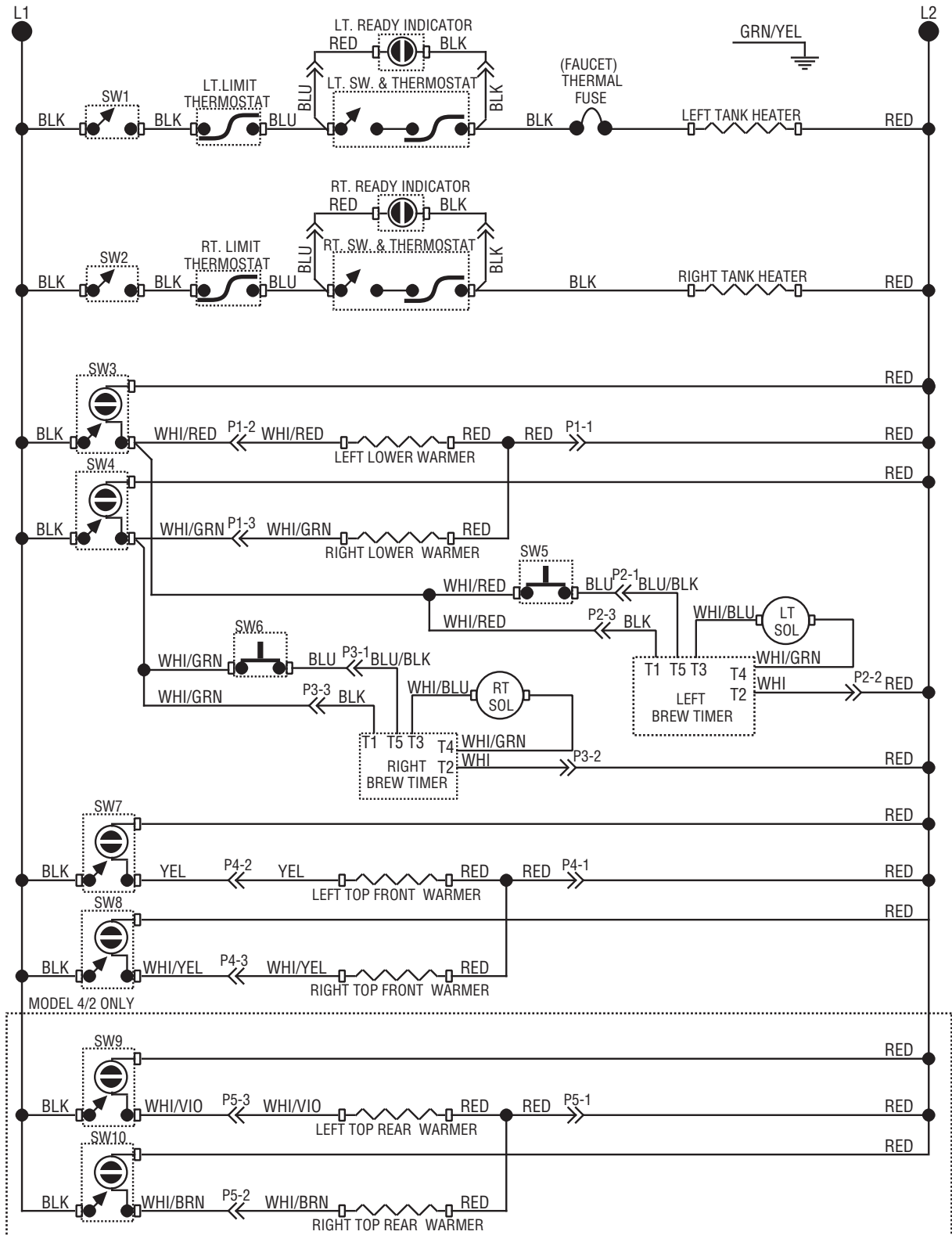
SCHEMATIC WIRING DIAGRAM CWTFA TWIN 2/2 & 4/2



**230 VOLTS AC 3 WIRE
THREE PHASE**

10736.0001G 12/00 © 1993 BUNN-O-MATIC CORPORATION

SCHEMATIC WIRING DIAGRAM CWTFA & CWTFB TWIN 2/2 & 4/2

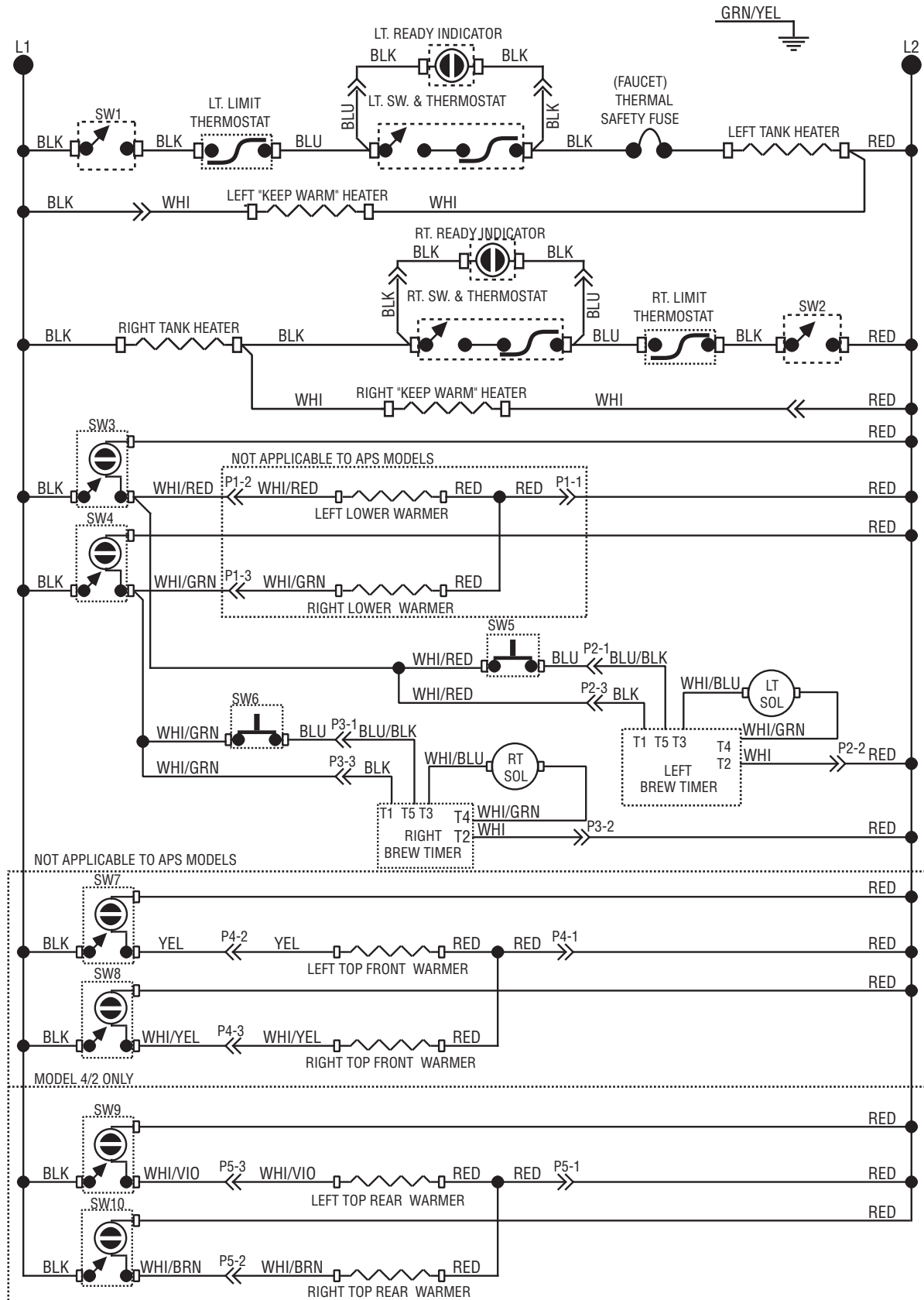


**200 OR 240 VOLTS AC 2 WIRE
SINGLE PHASE**

10736.0002J 12/00 © 1993 BUNN-O-MATIC CORPORATION

SCHEMATIC WIRING DIAGRAM

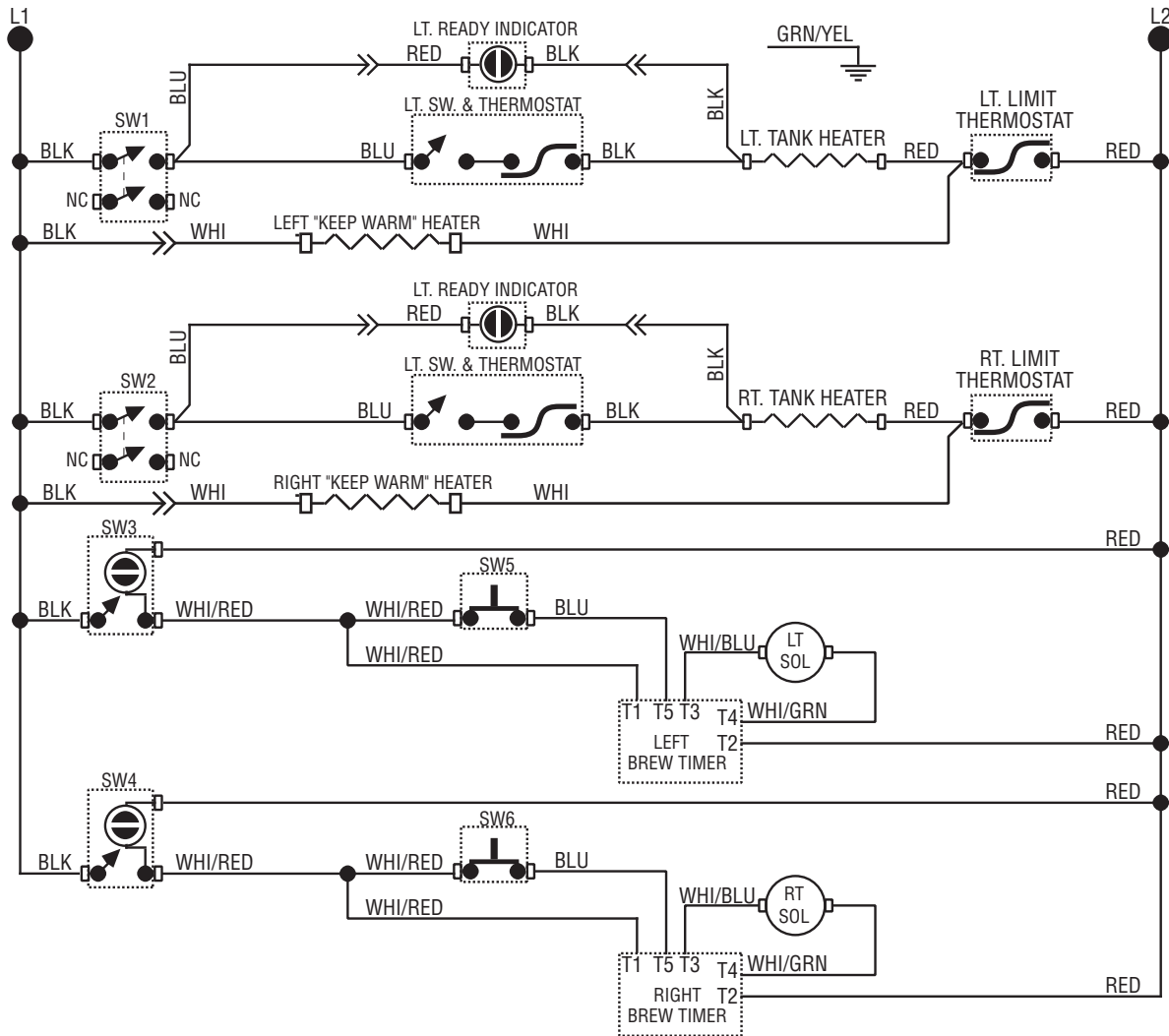
CWTFA 2/2 TWIN, CWTFA 4/2 TWIN & CWTFA TWIN-APS



**230 VOLTS AC 2 WIRE
SINGLE PHASE**

10736.0004A 02/06 © 2006 BUNN-O-MATIC CORPORATION

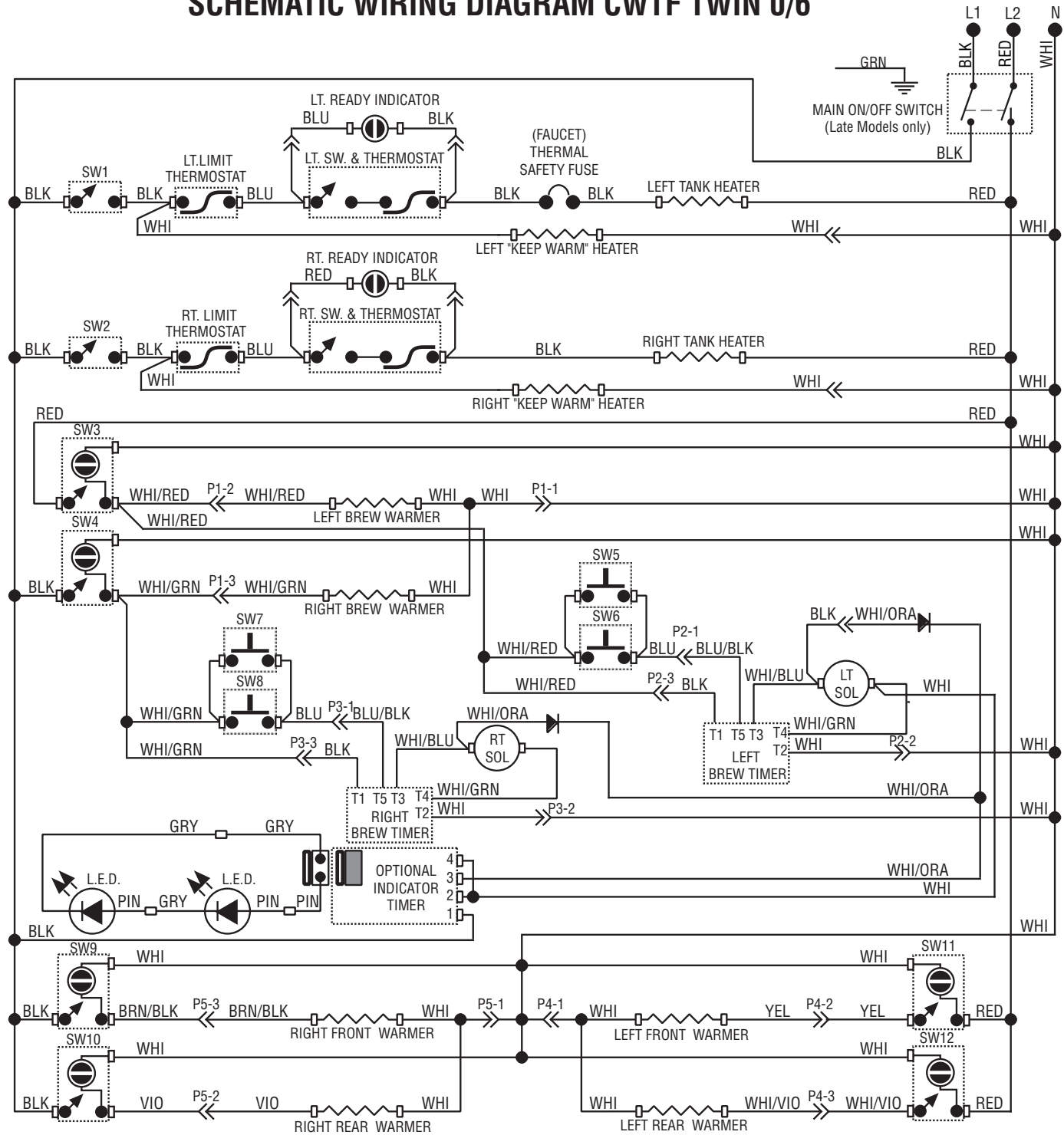
SCHEMATIC WIRING DIAGRAM CWTFA TWIN-APS CE



**230 VOLTS AC
2 WIRE + GND
SINGLE PHASE**

10736.0005B 08/07 © 2007 BUNN-O-MATIC CORPORATION

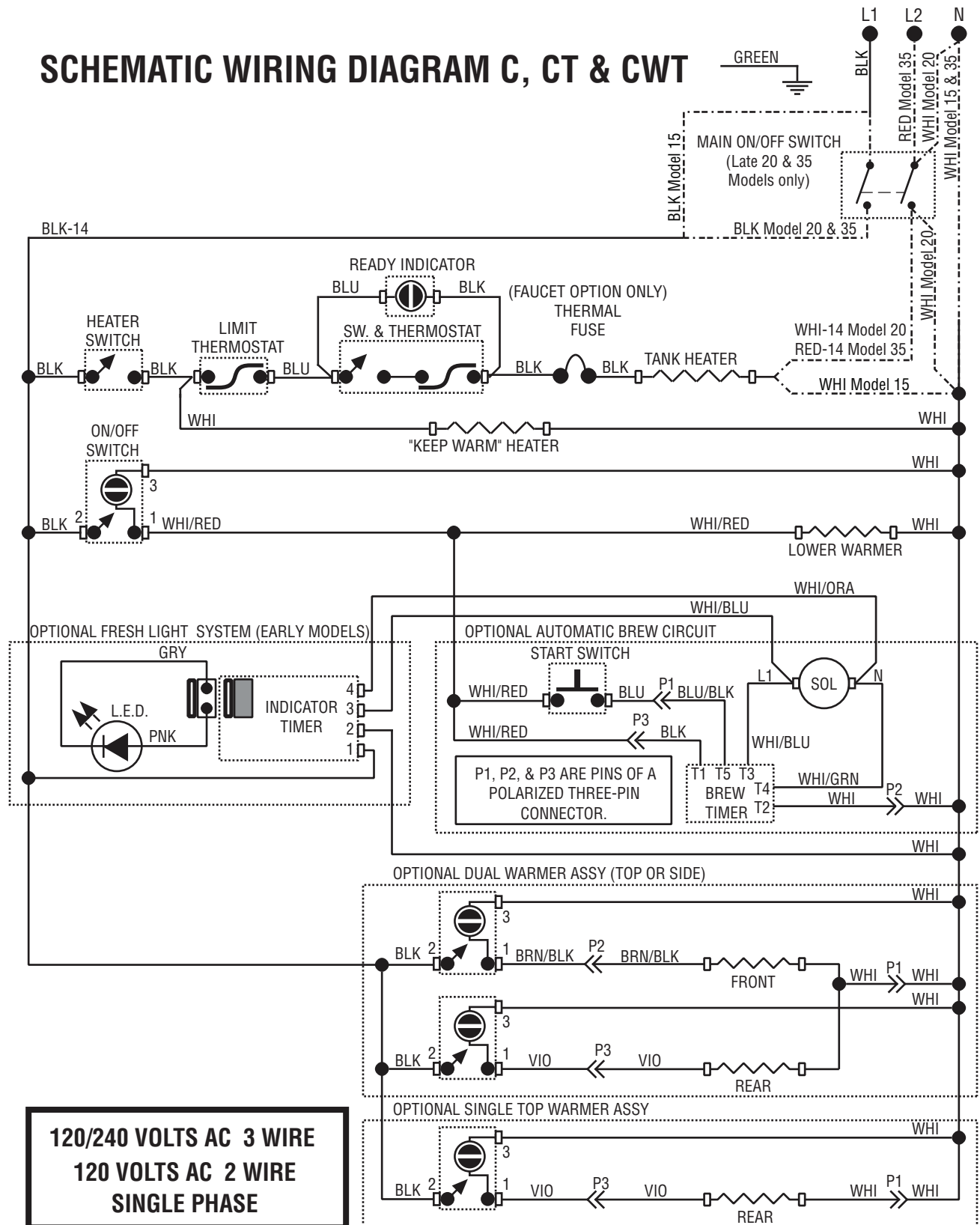
SCHEMATIC WIRING DIAGRAM CWTF TWIN 0/6



120/240 VOLTS AC
3 WIRE + GND
SINGLE PHASE

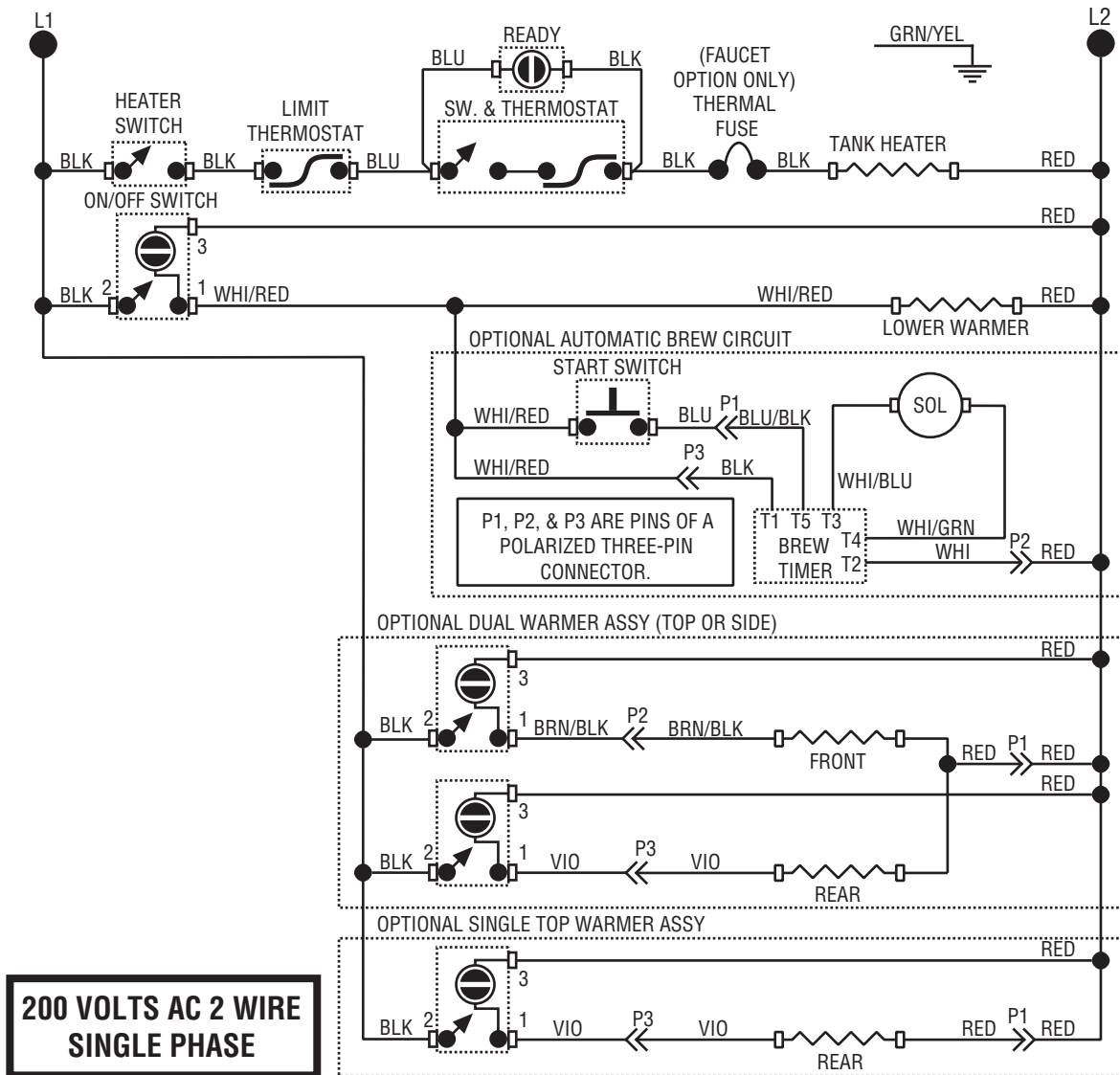
10741.0000H 01/07 © 1993 BUNN-O-MATIC CORPORATION

SCHEMATIC WIRING DIAGRAM C, CT & CWT



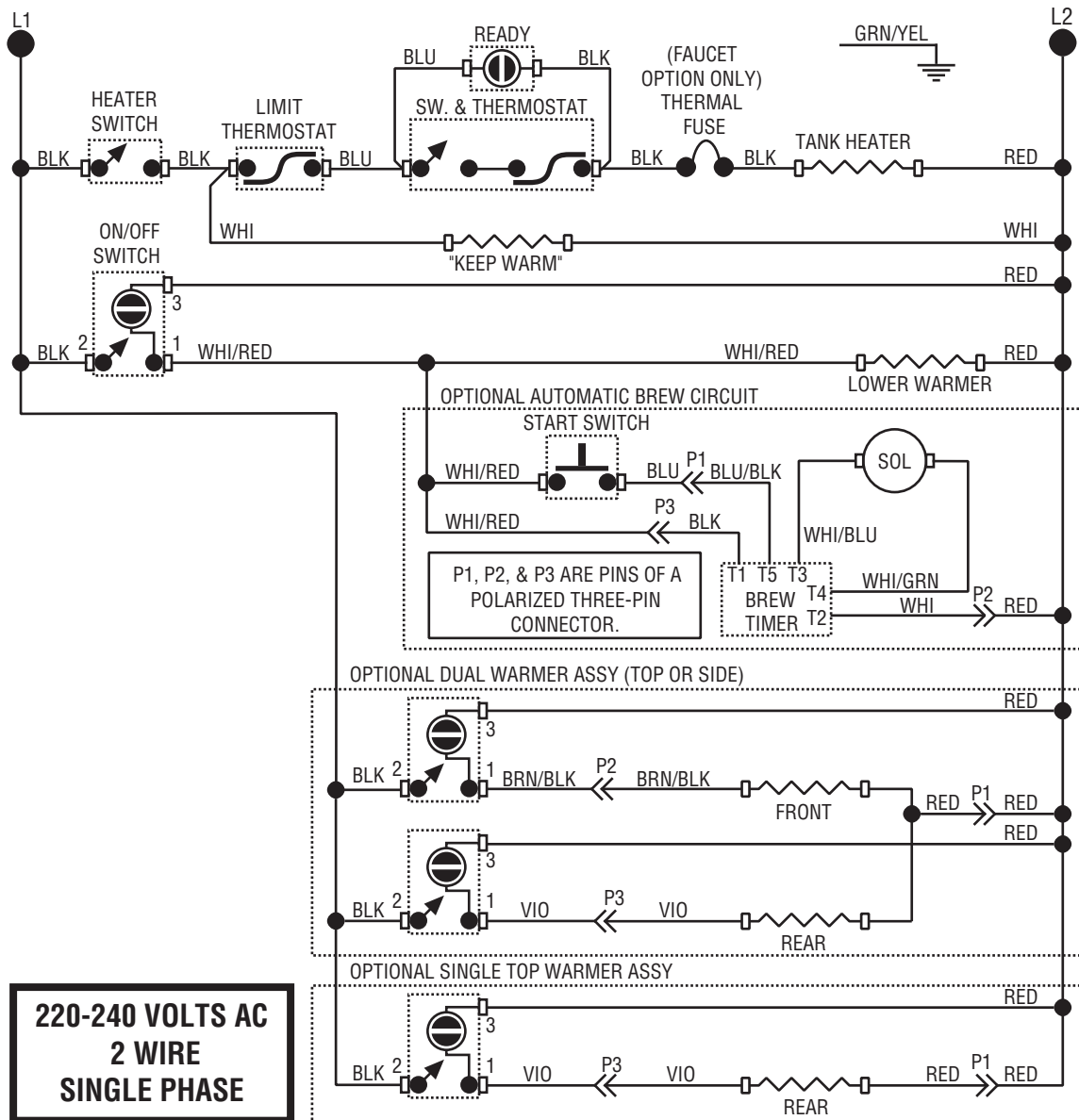
10836.0000H 05/09 ©1995 BUNN-O-MATIC CORPORATION

SCHEMATIC WIRING DIAGRAM CWTB



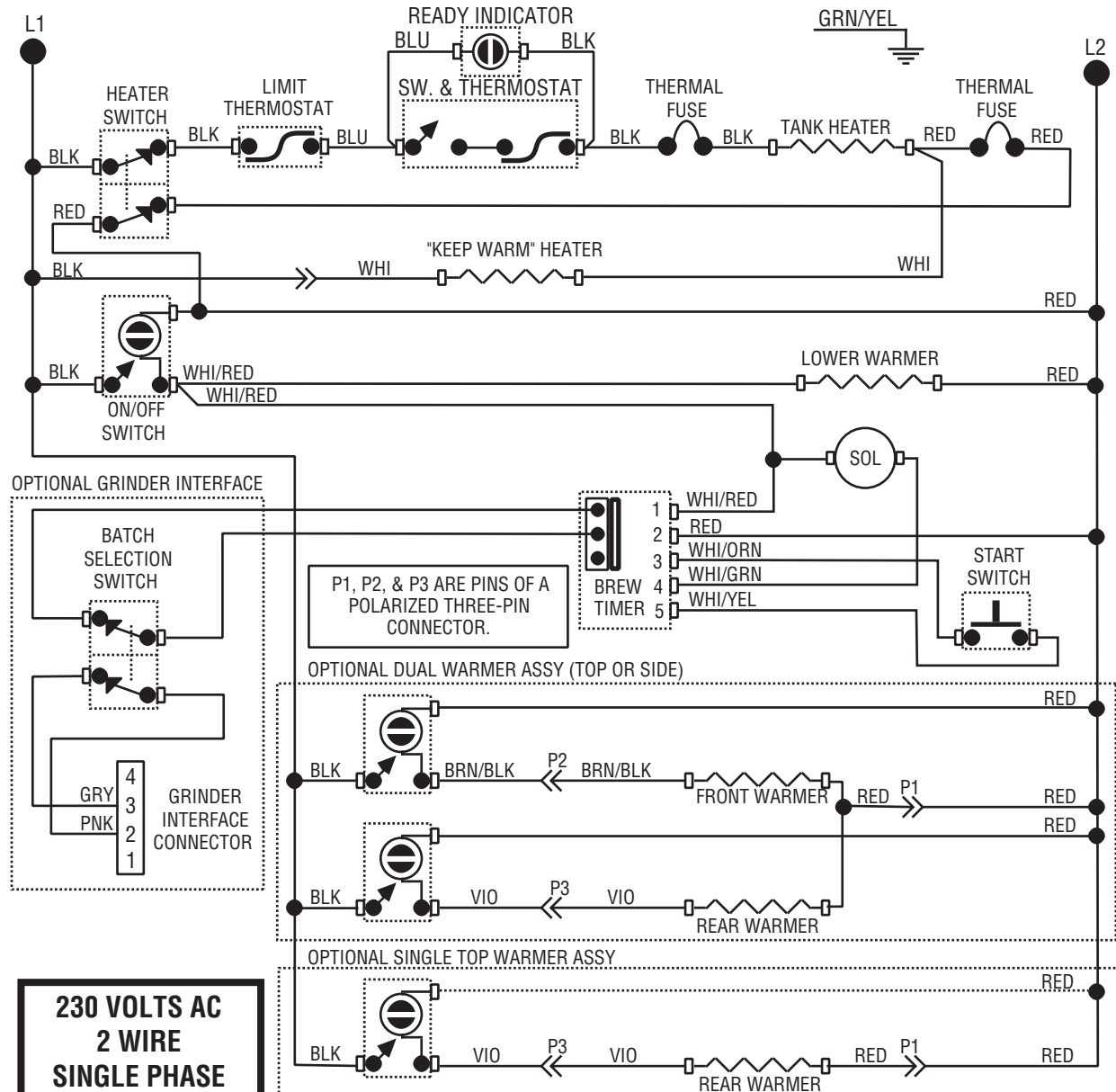
10836.0002E 07/00 ©1995 BUNN-O-MATIC CORPORATION

SCHEMATIC WIRING DIAGRAM CWTA



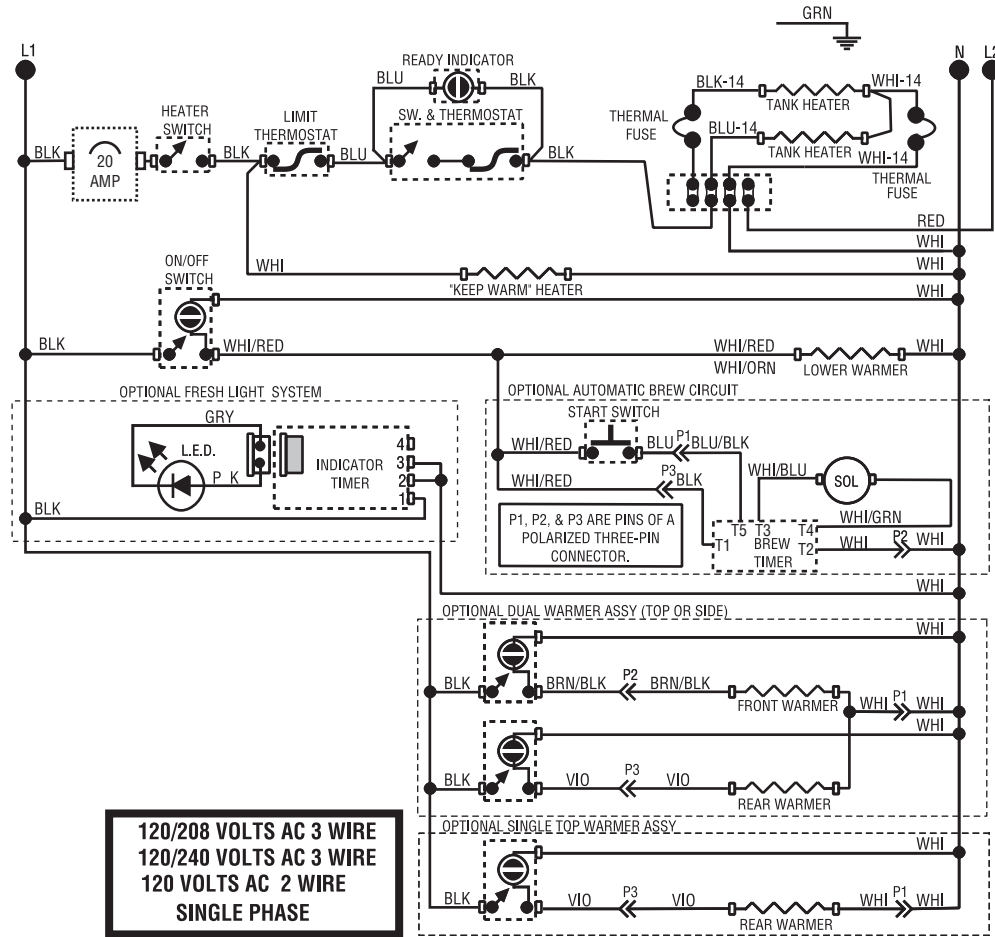
10836.0003E 07/00 ©1995 BUNN-O-MATIC CORPORATION

SCHEMATIC WIRING DIAGRAM CWTA - CE

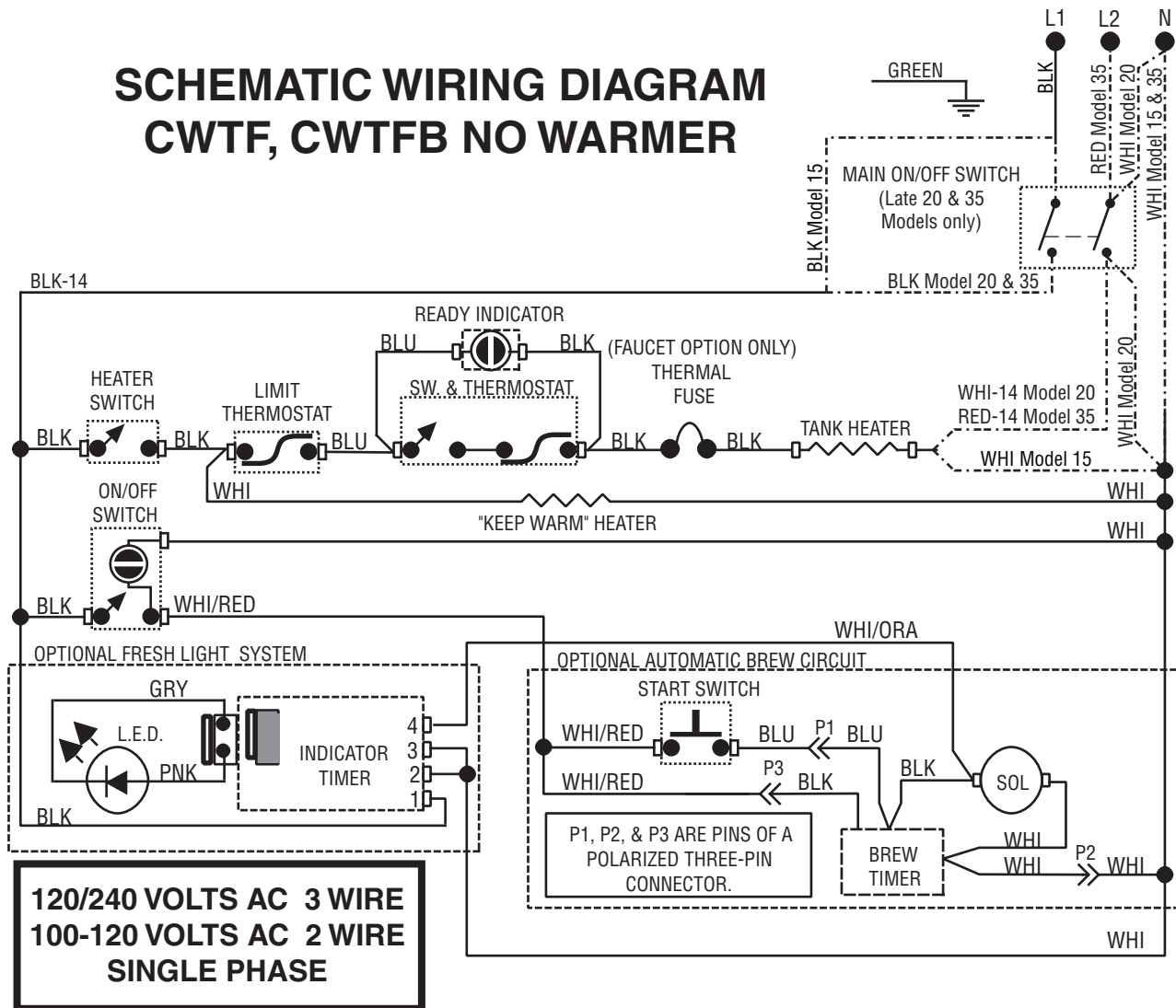


10836.0004H 10/02 ©1997 BUNN-O-MATIC CORPORATION

SCHEMATIC WIRING DIAGRAM C-MV, CT-MV, CTF-MV, CWT-MV & CWTF-MV

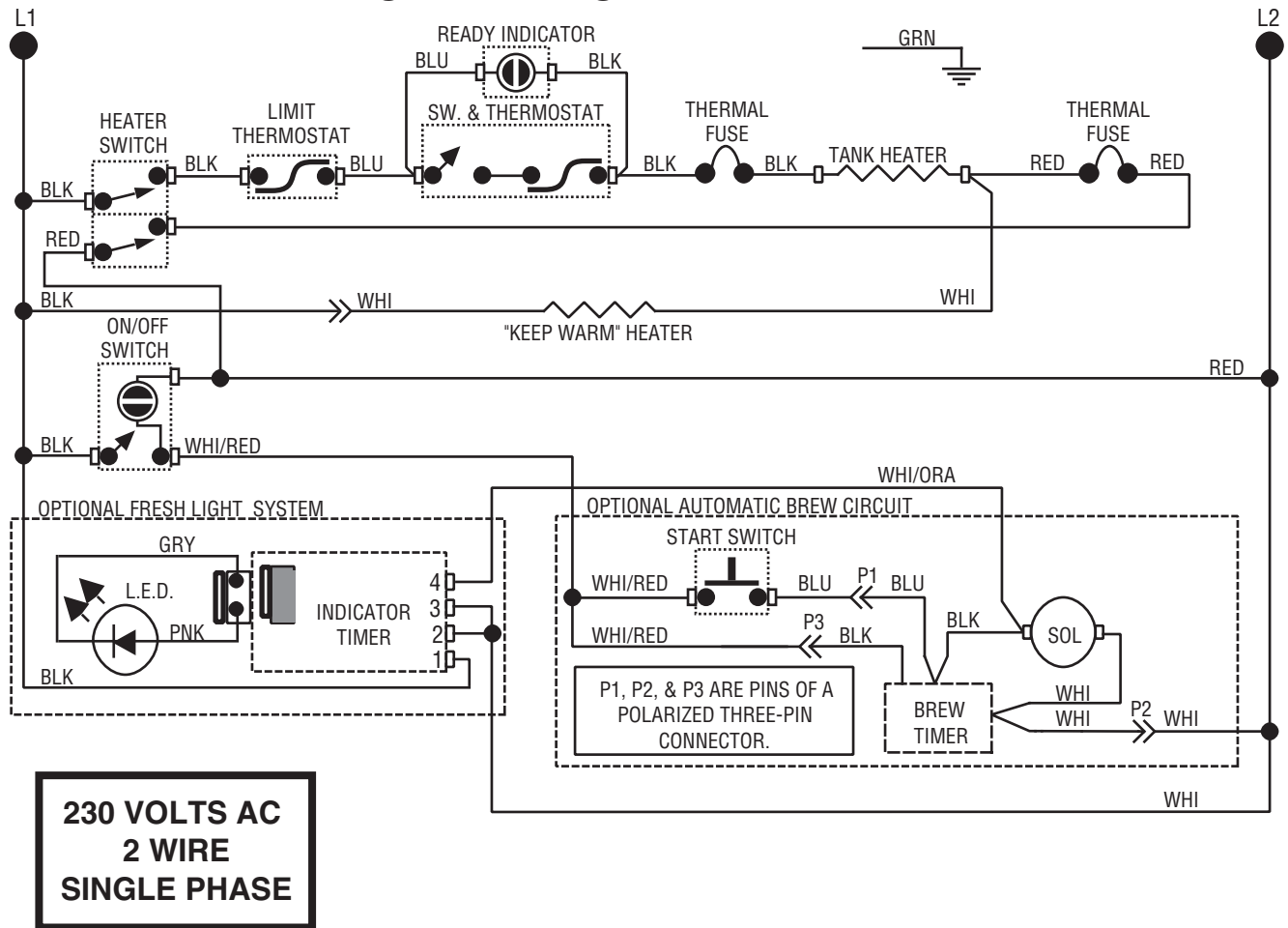


SCHEMATIC WIRING DIAGRAM CWTF, CWTFB NO WARMER



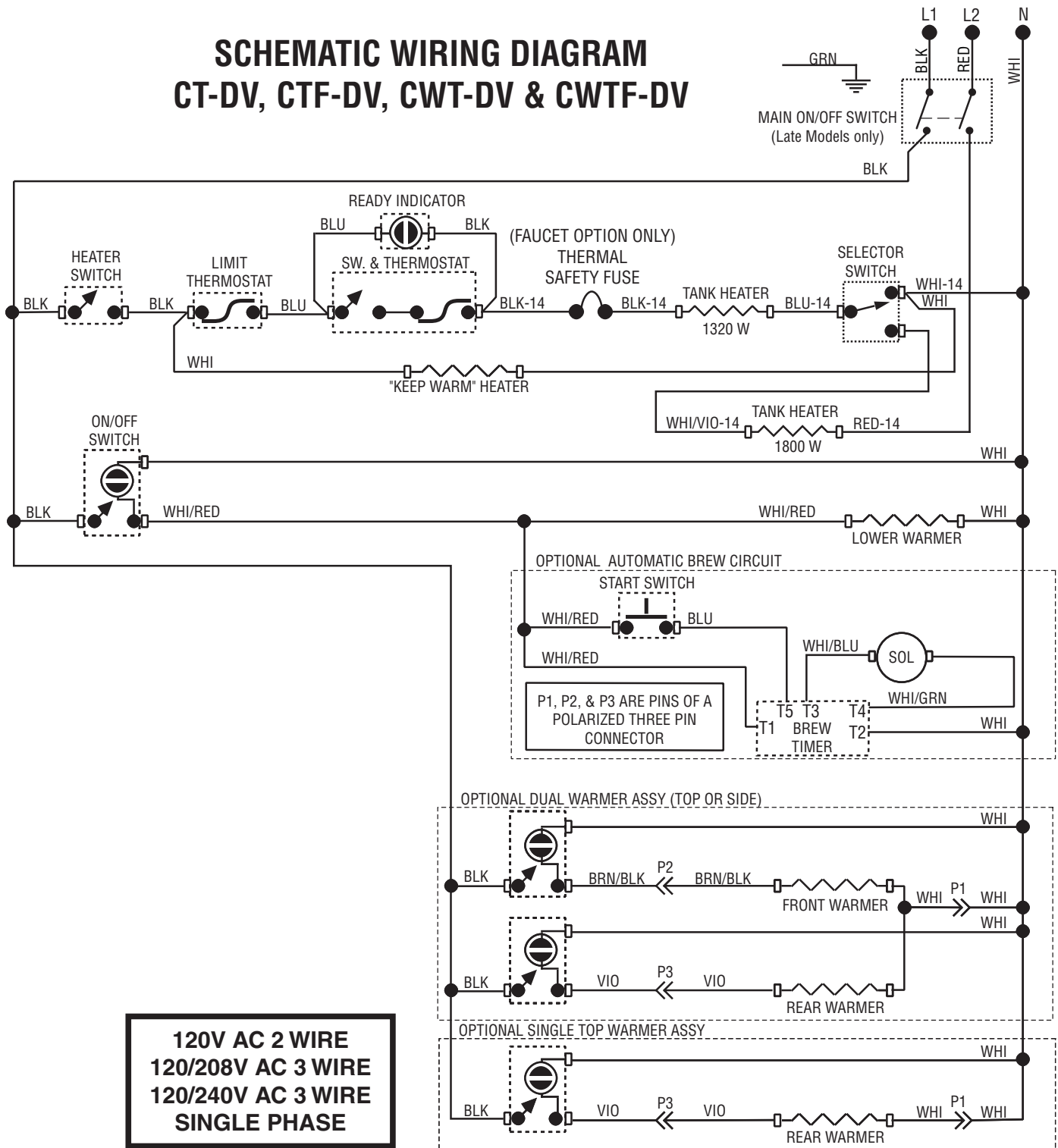
10836.0006M 02/07 ©1995 BUNN-O-MATIC CORPORATION

SCHEMATIC WIRING DIAGRAM CWTFA NO WARMER

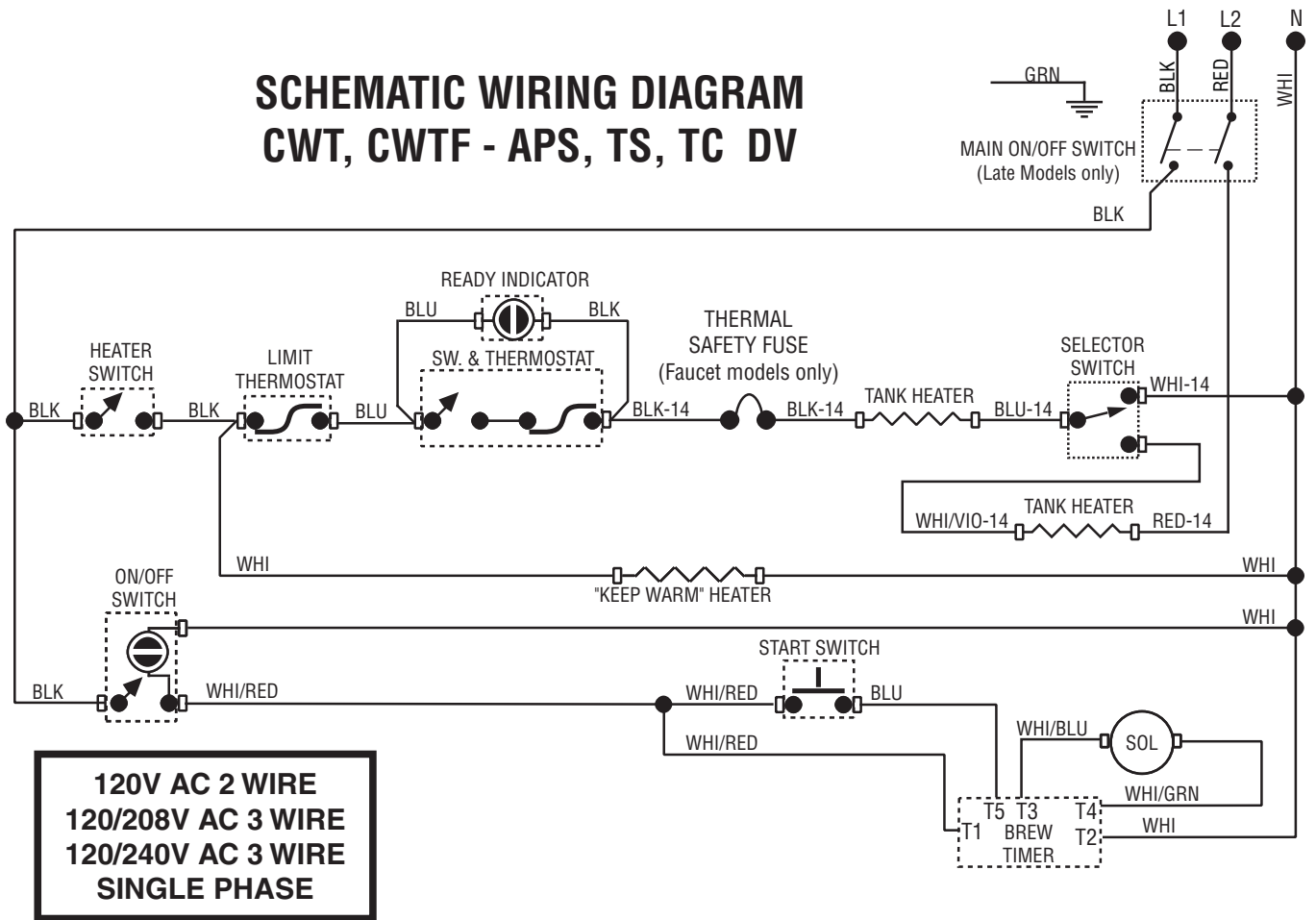


10836.0008A 12/99 ©1999 BUNN-O-MATIC CORPORATION

SCHEMATIC WIRING DIAGRAM CT-DV, CTF-DV, CWT-DV & CWTF-DV

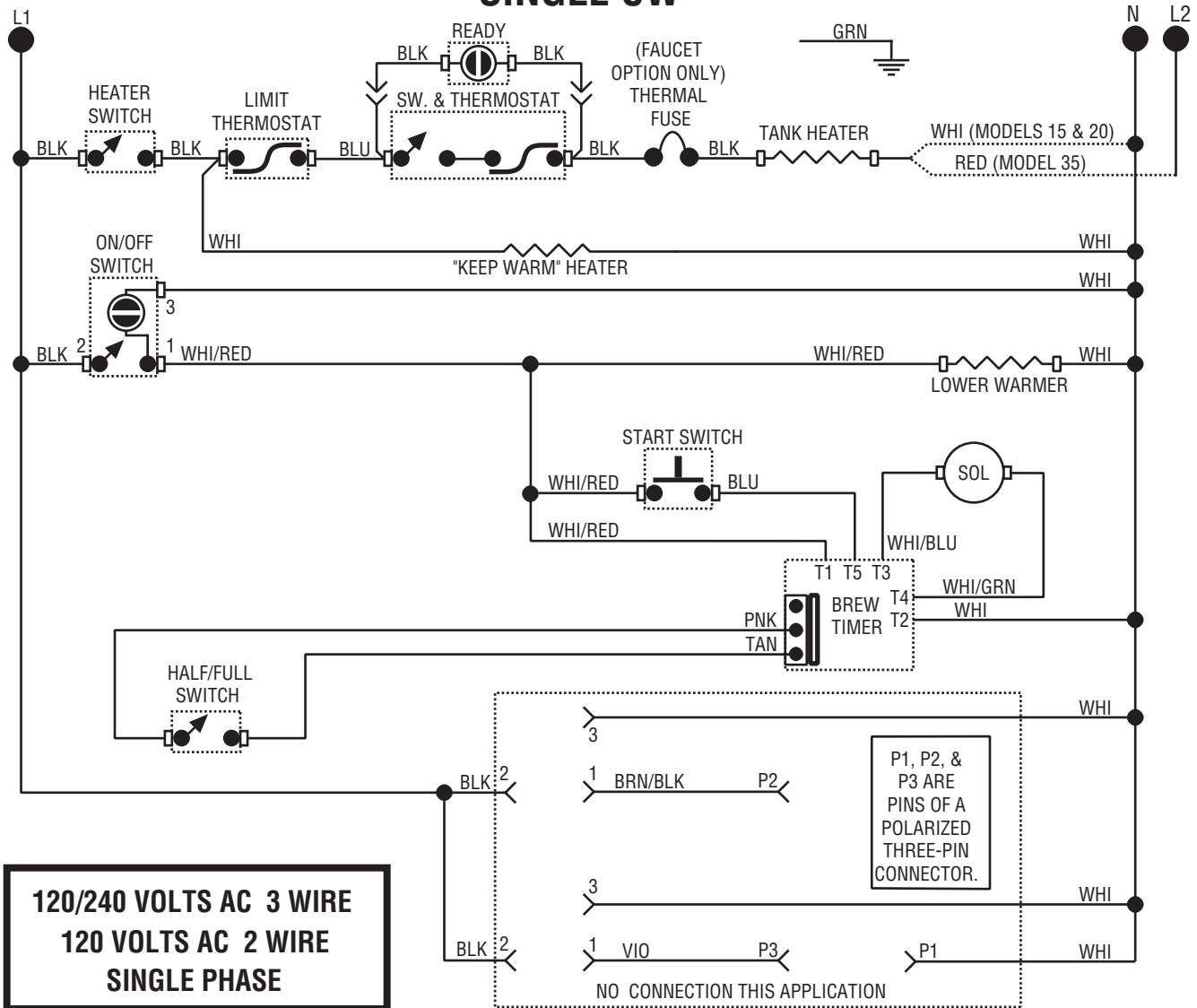


SCHEMATIC WIRING DIAGRAM CWT, CWTF - APS, TS, TC DV

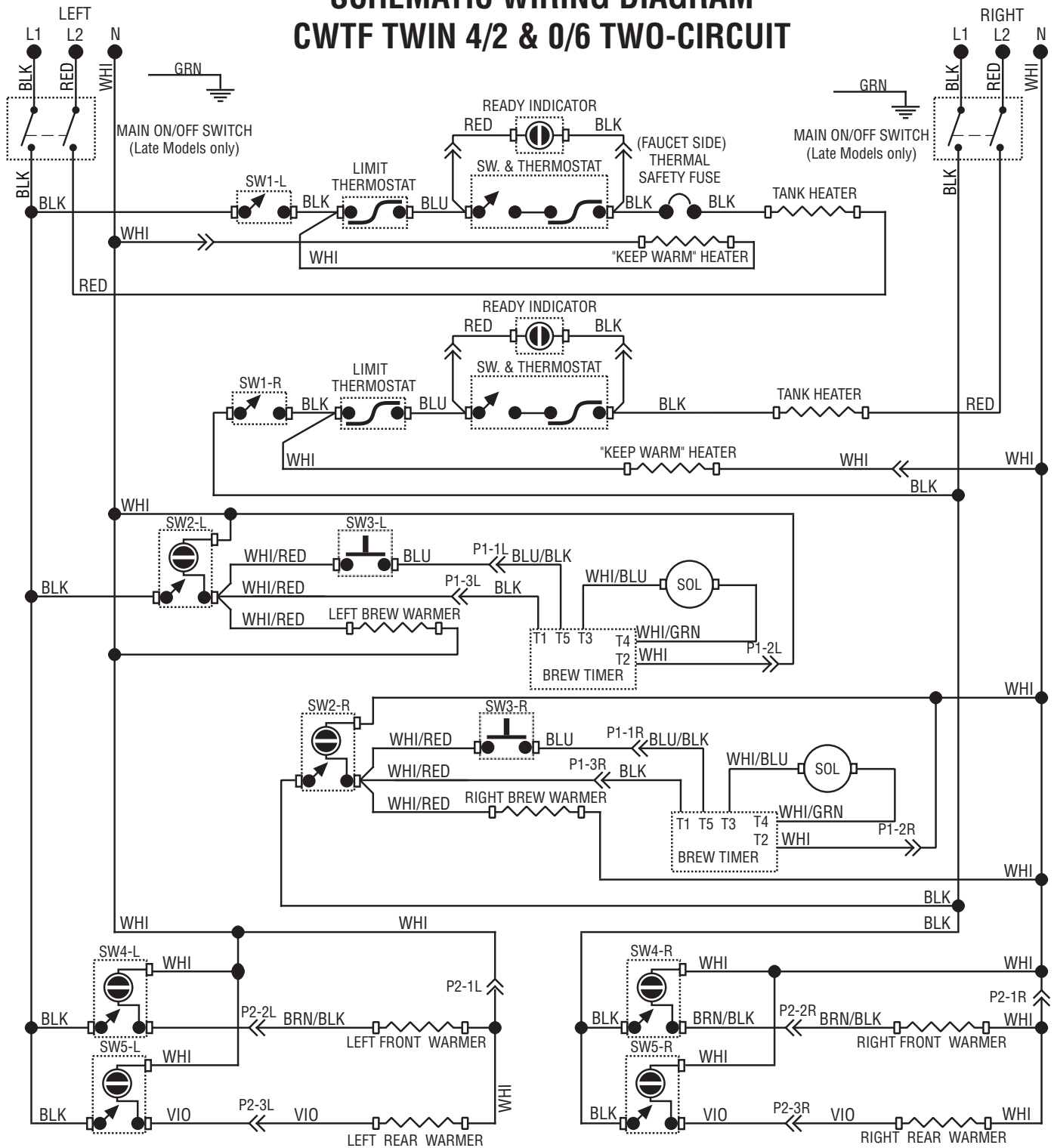


10836.0010B 02/07 ©2001 BUNN-O-MATIC CORPORATION

SCHEMATIC WIRING DIAGRAM SINGLE CW

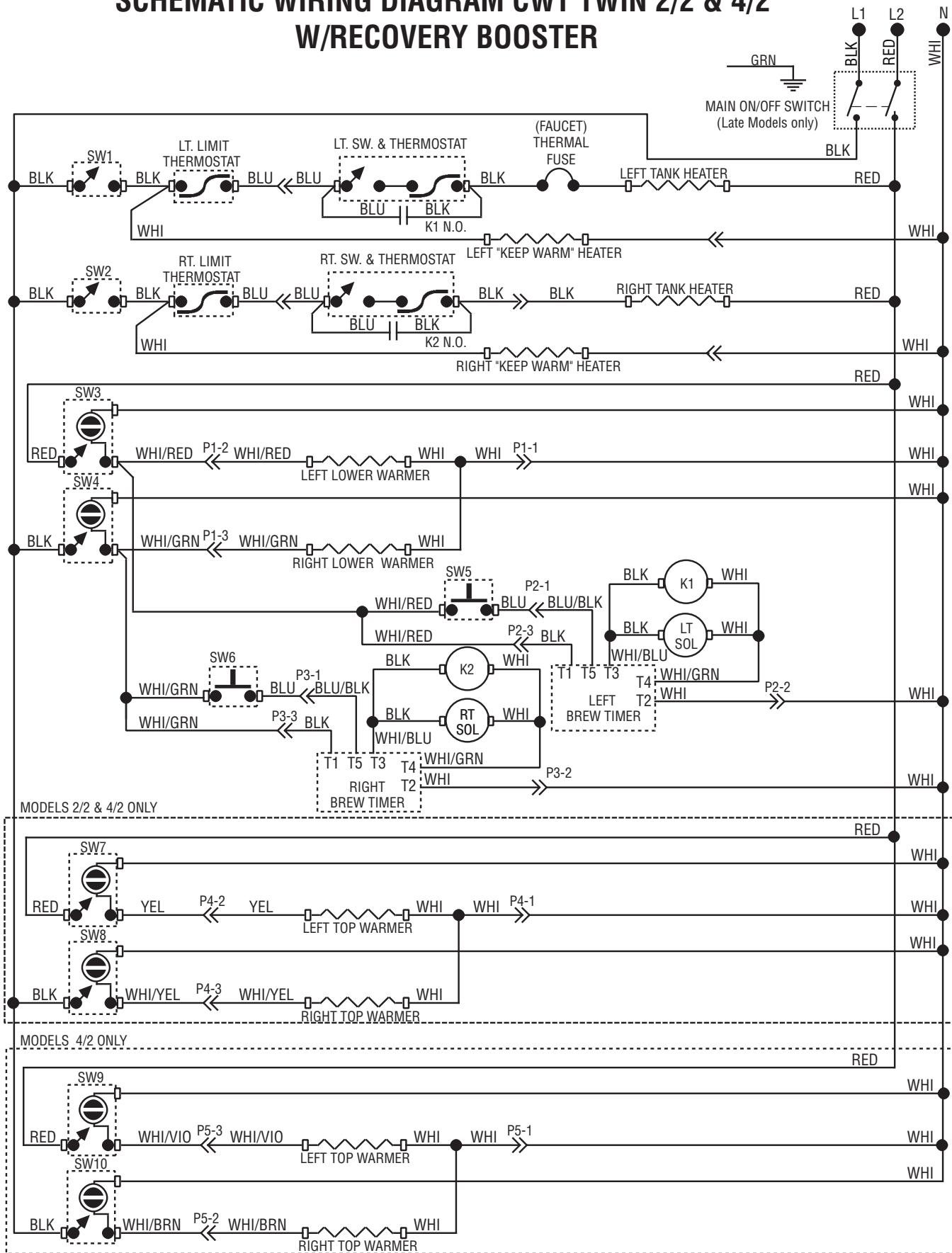


SCHEMATIC WIRING DIAGRAM CWTF TWIN 4/2 & 0/6 TWO-CIRCUIT



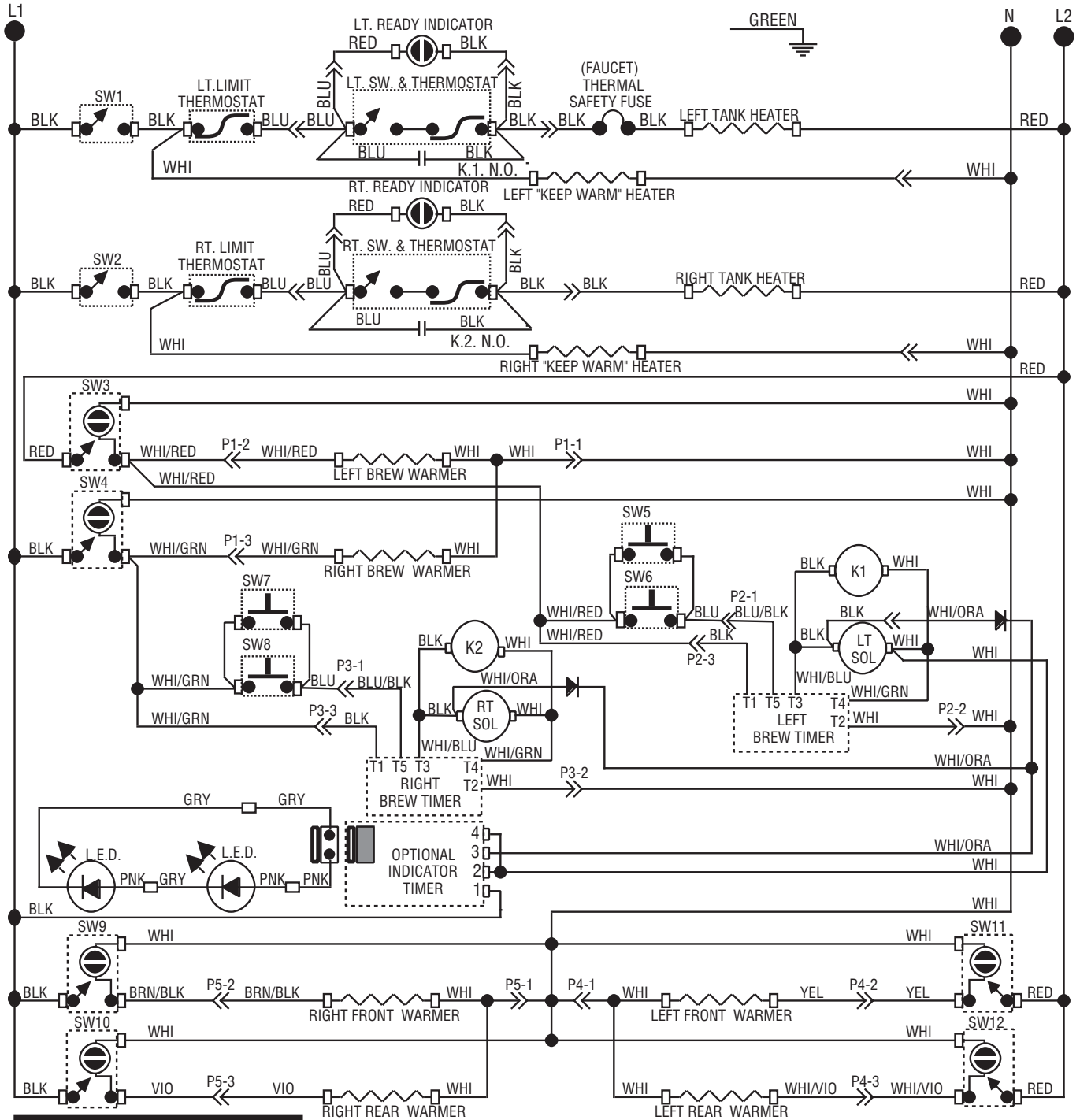
**TWO INDIVIDUAL BRANCH
CIRCUITS REQUIRED
EACH RATED
120/240 VOLTS AC
3 WIRE + GND
SINGLE PHASE**

SCHEMATIC WIRING DIAGRAM CWT TWIN 2/2 & 4/2 W/RECOVERY BOOSTER



**120/240 VOLTS AC
3 WIRE + GND
SINGLE PHASE**

SCHEMATIC WIRING DIAGRAM CWTW TWIN 0/6 WITH RECOVERY BOOSTER



**120/240 VOLTS AC 3 WIRE
SINGLE PHASE**

27693.0000D 07/03 © 1996 BUNN-O-MATIC CORPORATION

PART III

Illustrated Parts Catalog

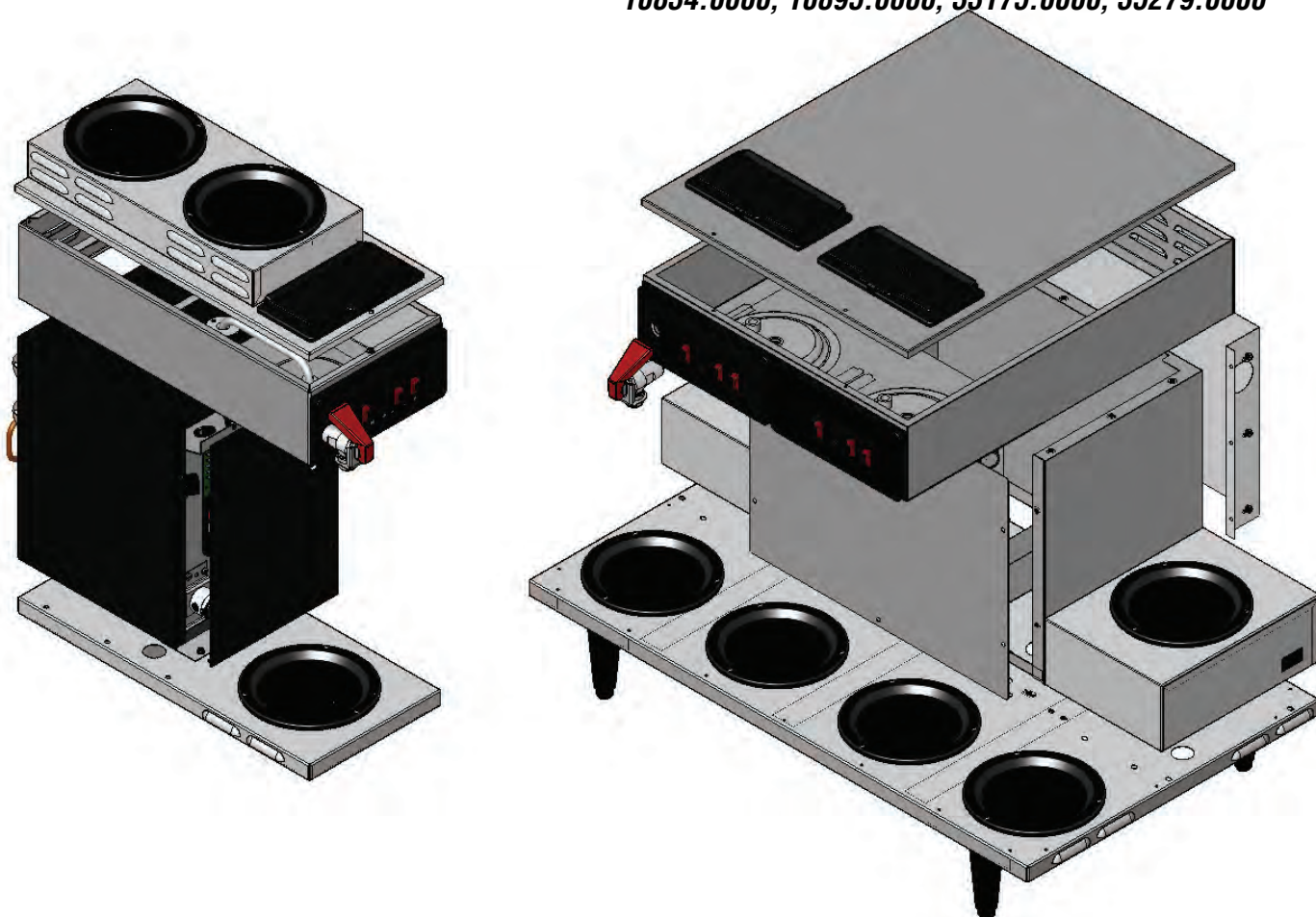
BUNN®

C, CT, CW, CWTF Series Including DV, MV, Pourover, APS/TC/TS, Twins & Single CW

Supersedes Illustrated Parts Catalogs:

10716.####; 10789.####; 10790.0000;

10834.0000; 10895.0000; 33175.0000; 35279.0000



ILLUSTRATED PARTS CATALOG

Designs, materials, weights, specifications, and dimensions for equipment or replacement parts are subject to change without notice.

BUNN-O-MATIC CORPORATION
POST OFFICE BOX 3227
SPRINGFIELD, ILLINOIS 62708-3227
PHONE: (217) 529-6601 FAX: (217) 529-6644



BUNN-O-MATIC COMMERCIAL PRODUCT WARRANTY

Bunn-O-Matic Corp. ("BUNN") warrants equipment manufactured by it as follows:

- 1) All equipment other than as specified below: 2 years parts and 1 year labor.
- 2) Electronic circuit and/or control boards: parts and labor for 3 years.
- 3) Compressors on refrigeration equipment: 5 years parts and 1 year labor.
- 4) Grinding burrs on coffee grinding equipment to grind coffee to meet original factory screen sieve analysis: parts and labor for 3 years or 30,000 pounds of coffee, whichever comes first.

These warranty periods run from the date of installation BUNN warrants that the equipment manufactured by it will be commercially free of defects in material and workmanship existing at the time of manufacture and appearing within the applicable warranty period. This warranty does not apply to any equipment, component or part that was not manufactured by BUNN or that, in BUNN's judgment, has been affected by misuse, neglect, alteration, improper installation or operation, improper maintenance or repair, damage or casualty. This warranty is conditioned on the Buyer 1) giving BUNN prompt notice of any claim to be made under this warranty by telephone at (217) 529-6601 or by writing to Post Office Box 3227, Springfield, Illinois 62708-3227; 2) if requested by BUNN, shipping the defective equipment prepaid to an authorized BUNN service location; and 3) receiving prior authorization from BUNN that the defective equipment is under warranty.

THE FOREGOING WARRANTY IS EXCLUSIVE AND IS IN LIEU OF ANY OTHER WARRANTY, WRITTEN OR ORAL, EXPRESS OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, ANY IMPLIED WARRANTY OF EITHER MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. The agents, dealers or employees of BUNN are not authorized to make modifications to this warranty or to make additional warranties that are binding on BUNN. Accordingly, statements by such individuals, whether oral or written, do not constitute warranties and should not be relied upon.

If BUNN determines in its sole discretion that the equipment does not conform to the warranty, BUNN, at its exclusive option while the equipment is under warranty, shall either 1) provide at no charge replacement parts and/or labor (during the applicable parts and labor warranty periods specified above) to repair the defective components, provided that this repair is done by a BUNN Authorized Service Representative; or 2) shall replace the equipment or refund the purchase price for the equipment.

THE BUYER'S REMEDY AGAINST BUNN FOR THE BREACH OF ANY OBLIGATION ARISING OUT OF THE SALE OF THIS EQUIPMENT, WHETHER DERIVED FROM WARRANTY OR OTHERWISE, SHALL BE LIMITED, AT BUNN'S SOLE OPTION AS SPECIFIED HEREIN, TO REPAIR, REPLACEMENT OR REFUND.

In no event shall BUNN be liable for any other damage or loss, including, but not limited to, lost profits, lost sales, loss of use of equipment, claims of Buyer's customers, cost of capital, cost of down time, cost of substitute equipment, facilities or services, or any other special, incidental or consequential damages.

AutoPOD, AXIOM, BrewLOGIC, BrewMETER, Brew Better Not Bitter, BrewWISE, BrewWIZARD, BUNN Espresso, BUNN Family Gourmet, BUNN Gourmet, BUNN Pour-O-Matic, BUNN, BUNN with the stylized red line, BUNNlink, Bunn-OMatic, Bunn-O-Matic, BUNNserve, BUNNSERVE with the stylized wrench design, Cool Froth, DBC, Dr. Brew stylized Dr. design, Dual, Easy Pour, EasyClear, EasyGard, FlavorGard, Gourmet Ice, Gourmet Juice, High Intensity, iMIX, Infusion Series, Intellisteam, My Café, PowerLogic, Quality Beverage Equipment Worldwide, Safety-Fresh, savemycoffee.com, Scale-Pro, Silver Series, Single, Smart Funnel, Smart Hopper, SmartWAVE, Soft Heat, SplashGard, The Mark of Quality in Beverage Equipment Worldwide, ThermoFresh, 392, Beverage Bar Creator, Beverage Profit Calculator, BUNNSource, Coffee At Its Best, Digital Brewer Control, Nothing Brews Like a BUNN, Pouring Profits, Respect Earth, Respect Earth with the stylized leaf and coffee cherry design, Signature Series, Tea At Its Best, The Horizontal Red Line, Titan, Ultra are either trademarks or registered trademarks of Bunn-O-Matic Corporation.

TABLE OF CONTENTS

TOP COVERS	4
HOOD ASSEMBLIES	8
TRUNKS.....	10
BASES.....	16
TANK AND COMPONENTS	20
FILL BASIN	24
MANIFOLDS-LATER TWINS.....	26
STRAINER/FLOW CONTROLS-EARLY TWINS.....	28
MANIFOLDS-LATER SINGLES.....	30
STRAINER/FLOW CONTROLS-SECOND STYLE SINGLES.....	32
STRAINER/FLOW CONTROLS-FIRST STYLE SINGLES	34
FILL SOLENOIDS	36
FAUCET	38
WARMER ASSEMBLIES.....	40
ELECTRICAL AND OPERATING CONTROLS	42
FUNNELS	52
NUMERICAL INDEX	54

Explanation of codes:

15 - All components in machine are rated for 120 Volts ac, (15 Amps)

20 - All components in machine are rated for 120 Volts ac, (20 Amps)

35 (120/240V) - Tank heater rated for 240 volts ac, all other components rated for 120 volts ac (20 Amps)

DV - Dual Voltage. 2 tank heaters with toggle switch

MV - Multi Voltage. 2 tank heaters with terminal block. (Replaced by DV)

A - All components in machine are rated for 240 volts ac.

B - All components are rated for either 100 volts ac, or 200 volts ac.

C - Canadian models only

CE - European models only.

TWIN - 2 brewers in 1 chassis.

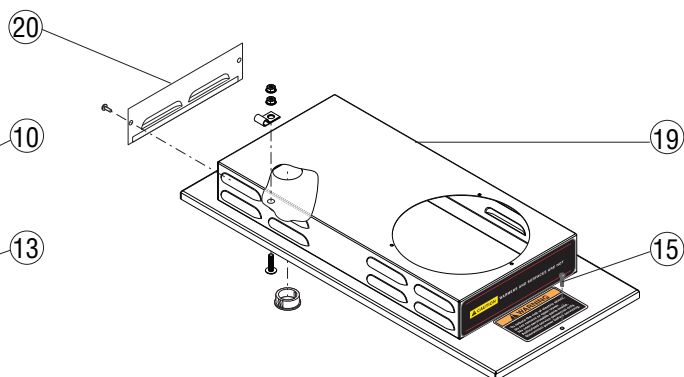
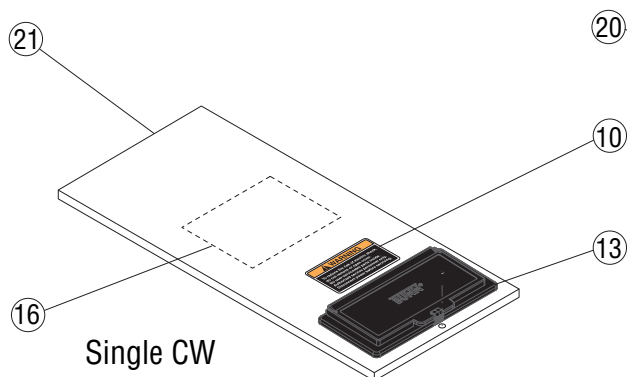
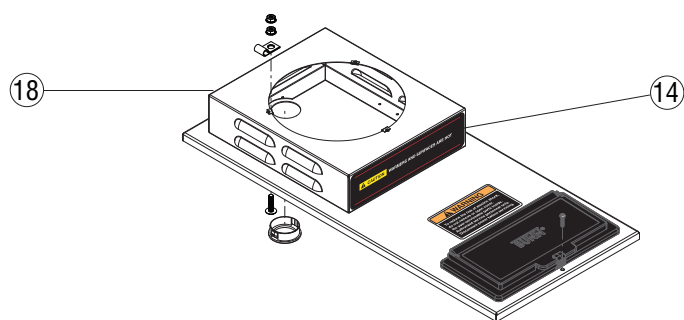
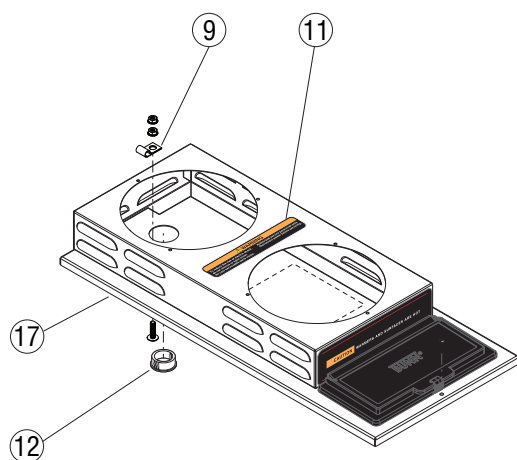
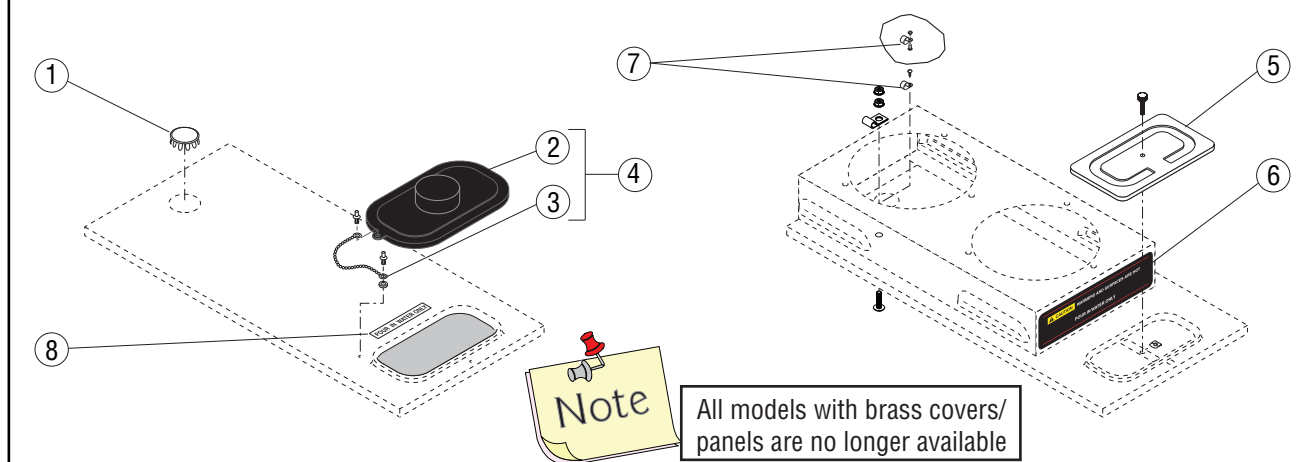
APS - Airpot Server (No warmers)

TC - Thermal Carafe (No warmers)

TS - Thermal Server (No warmers)

Fraction	Decimal		Fraction	Decimal
1/16	0.063		9/16	0.563
1/8	0.125		5/8	0.625
3/16	0.188		11/16	0.688
1/4	0.250		3/4	0.750
5/16	0.313		13/16	0.813
3/8	0.375		7/8	0.875
7/16	0.438		15/16	0.938
1/2	0.500		1	1.000

Pour in lids for earlier models

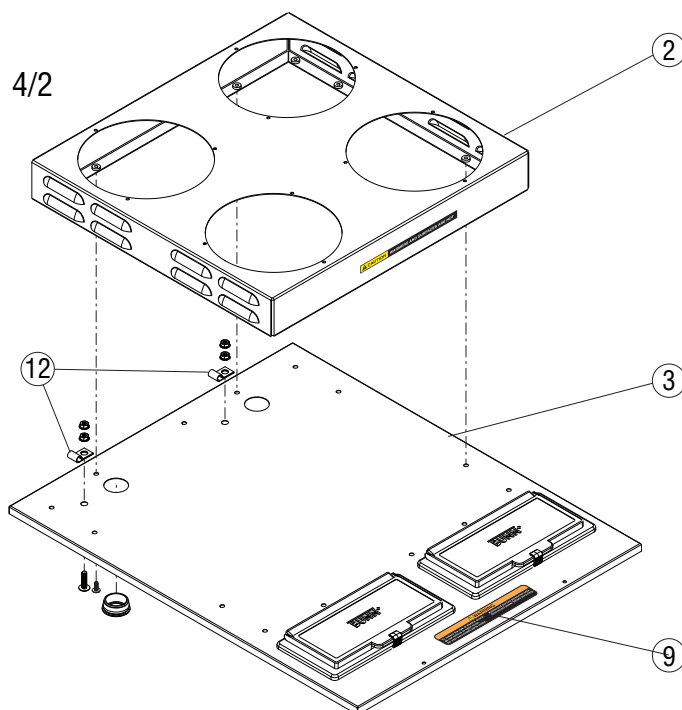
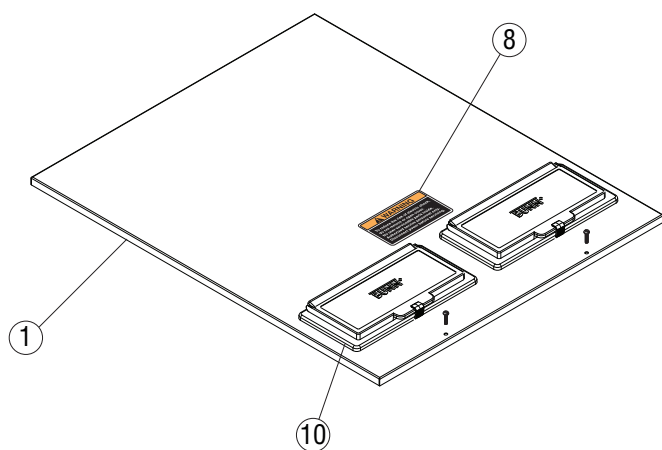


TOP COVER ASSEMBLIES-SINGLES

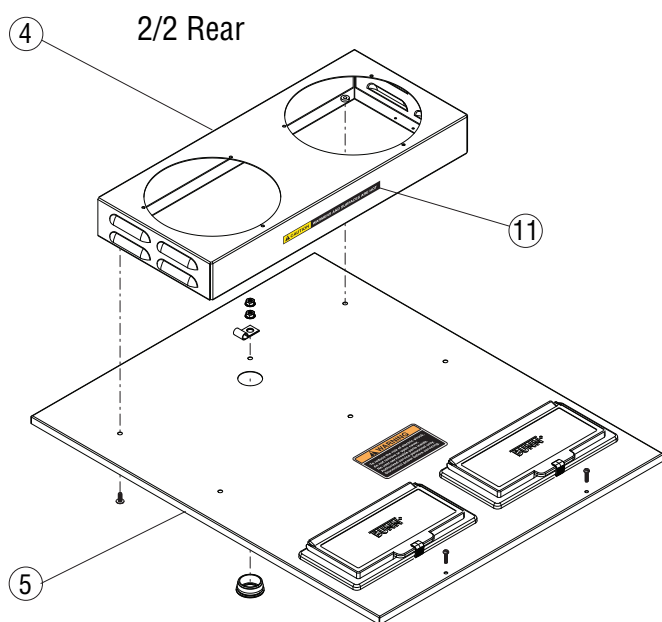
ITEM	PART NO.	QTY. TWIN	QTY. SINGLE	DESCRIPTION	
1	02999.0000	-	1	Plug, SST 1.19" Dia.	
2	13110.0000	-	1	Lid	
3	12978.0000	-	1	Chain Assembly	
4	12981.0001	-	1	Lid/Chain Kit (Includes # 2-3)	
5	02722.0000	2	1	Lid, Pour-in SST	
	02722.0001	2	1	Lid, Pour-in BLK	
	01319.0000	2	1	SST thumbscrew # 8-32 x .75"	
	01319.0000	2	1	BLK thumbscrew # 8-32 x .75"	
	00912.0000	2	1	Fastener, "J" Type # 8-32	
6	02763.0000	-	1	Decal, Caution-Warmers and Surfaces are Hot - Pour in Water Only	
7	04831.0000	1	1	Clamp	
	01315.0000	1	1	Screw, Truss Head #8-32 x .375"	} First Style
	00908.0000	1	1	Nut #8-32	
	02332.0002	1	1	Screw, Hex-crimptite #6-32 X .375"	} Second Style
8	00833.0000	-	1	Decal, Pour in Water Only	
9	41760.0000	2	1	Clip, Cable - SST	} Later Models
	01326.0007	2	1	Screw, TRH SLTD 10-32x.75LG	
	00971.0000	4	2	Nut, Keps #10-32 Zinc Pl	
10	37881.0000	1	1	Decal, No User Serviceable Parts	
11	37881.0002	-	1	Decal, No User Serviceable Parts	
12	01592.0000	2	1	Bushing, Snap 1" Dia.	
	01592.0001	1	1	Bushing, Snap 1.188" Dia.	
13	38498.1000	2	1	Flip Lid Assembly w/Clip	
14	02765.0000	1	-	Decal, Caution-Warmers are Hot	
15	01303.0000	2	1	Screw, SST Panhead #4-40 x .5"	
	01303.0002	2	1	Screw, BLK Panhead #4-40 x .5"	
	00916.0000	2	1	Fastener, "J" Type # 4-40	
16	28180.0000	-	1	Decal, Multi Volt Heater Terminal Block Wiring Diagram	
17	38496.1002	-	1	Top Cover Assy. 2 Warmer SST (Includes # 11-14)	
	40085.1000	-	1	Top Cover Assy. 2 Warmer BLK	
18	38496.1000	-	1	Top Cover Assy. 1 Warmer Rear SST (Includes # 11-14)	
19	25633.0002	-	1	Top Cover Assy. 1 Warmer Front SST (Includes # 10, 12, 14)	
20	02732.0000	-	1	Panel, Rear SST	
	01315.0000	-	1	Screw, Truss Head #8-32 x .375"	
21	38503.1000	-	1	Top Cover Assy. No Warmer SST (Includes # 10, 13)	
	38504.1000	-	1	Top Cover Assy. No Warmer BLK (Includes # 10, 13)	

All covers/housings include flip
lids &/or decals as required.

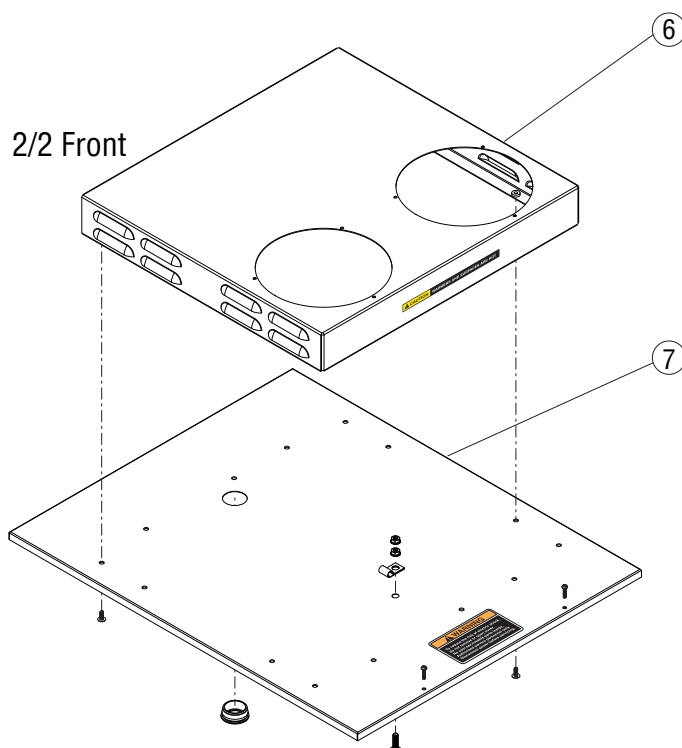
APS/TC & O/6



2/2 Rear

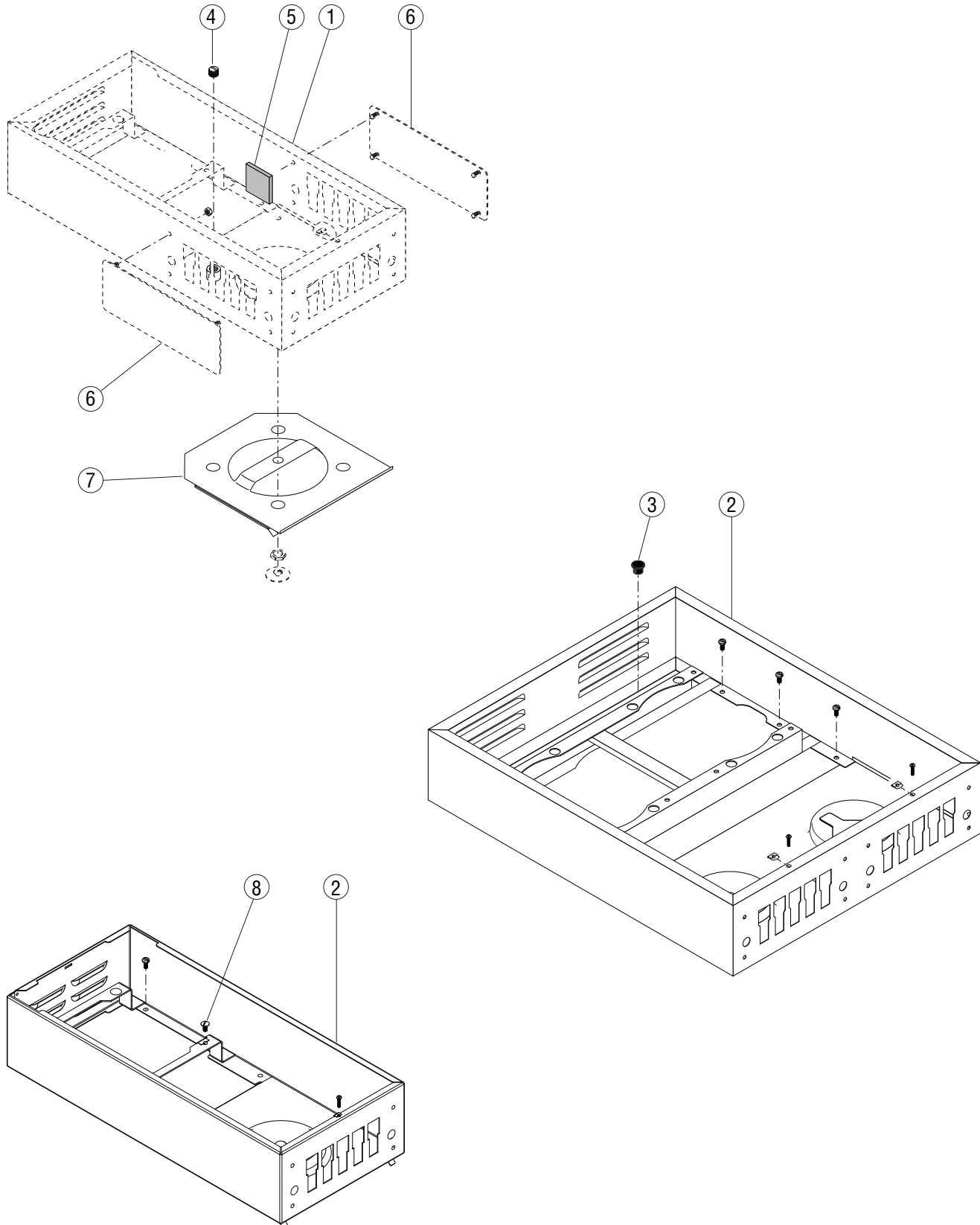


2/2 Front



TOP COVER ASSEMBLIES-TWINS

ITEM	PART NO.	QTY. TWIN	QTY. SINGLE	DESCRIPTION
1	38707.1000	1	-	Cover Assembly SST No Warmers (Incl # 8, 10)
	38707.1003	1	-	Cover Assembly BLK No Warmers (Incl # 8, 10)
2	24254.0001	1	-	Housing Assembly, SST 4/2 (Incl # 11)
	01347.0000	10	-	Screw, Truss Head #6-32 x .375"
3	38707.1001	1	-	Cover Assembly SST 4/2 (Incl # 9, 10)
4	24254.0000	1	-	Housing Assembly, SST 2/2 Rear (Incl # 11)
	01347.0000	6	-	Screw, Truss Head #6-32 x .375"
5	38707.1002	1	-	Cover Assembly SST 2/2 Rear (Incl # 8, 10)
6	24254.0002	1	-	Housing Assembly, SST 2/2 Front (Incl # 11)
	01347.0000	10	-	Screw, Truss Head #6-32 x .375"
7	25864.0000	1	-	Cover Assembly SST 2/2 Front (Incl # 8)
8	37881.0000	1	1	Decal, No User Serviceable Parts
9	37881.0002	1	1	Decal, No User Serviceable Parts
10	38498.1000	2	1	Flip Lid Assembly w/Clip
11	12364.0000	1	-	Decal, Caution-Warmers Are Hot
12	41760.0000	2	1	Clip, Cable - SST
	01326.0007	2	1	Screw, TRH SLTD 10-32x.75LG
	00971.0000	4	2	Nut, Keps #10-32 Zinc Pl



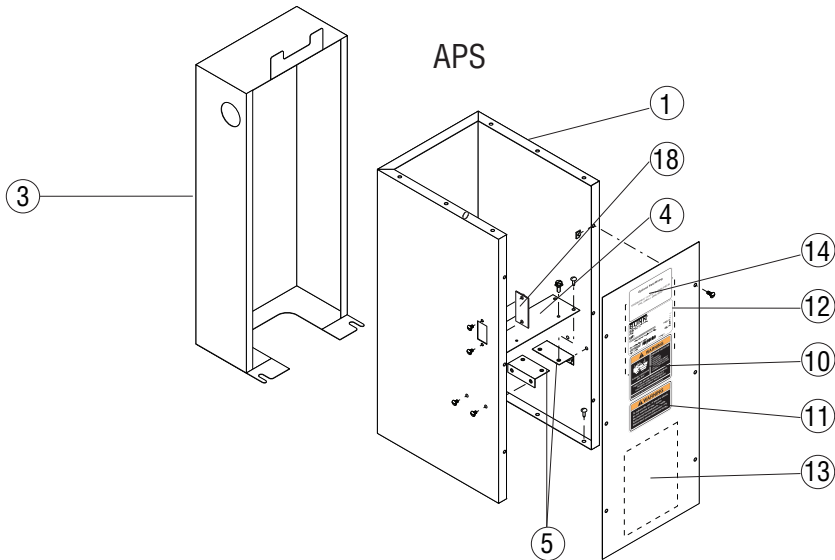
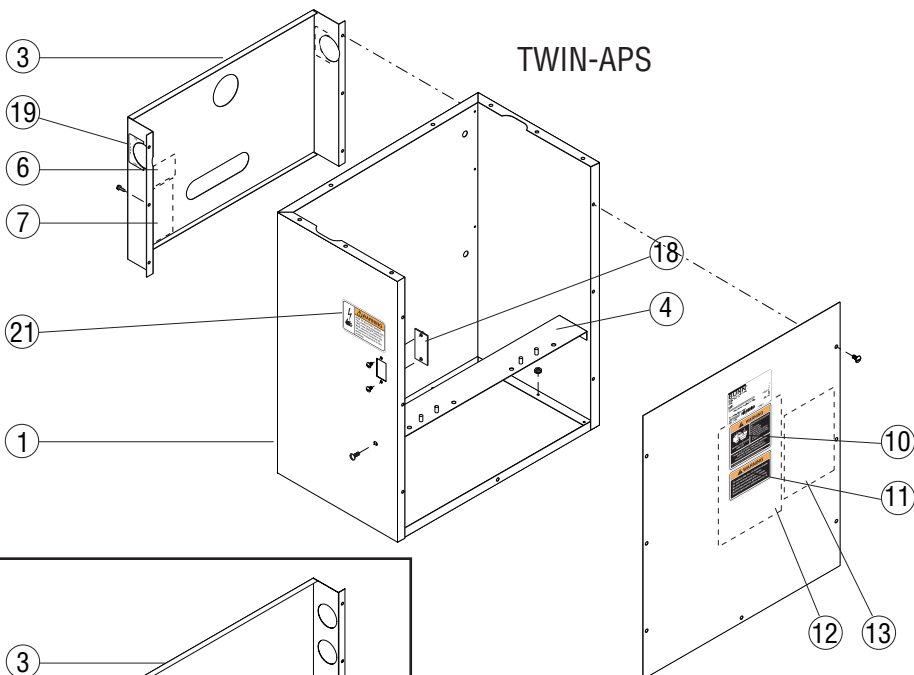
HOOD ASSEMBLIES

ITEM	PART NO.	QTY. TWIN	QTY. SINGLE	DESCRIPTION
1	13350.0008*	-	1	Housing, Hood SST (Early Style No Longer Available, Order # 2)
	02308.0000	-	6	Screw #8-32 x .375" (Hood to Trunk)
2	13350.0006	-	1	Housing, Hood SST (7.125" Narrow Funnel) CWTF, Single CW
	13350.0016	-	1	Housing, Hood BLK (7.125" Narrow Funnel)
	13350.0011	-	1	Housing, Hood SST (7.625" Wide Funnel)
	23232.0000 *	1	-	Housing, Hood SST (7.125" Narrow Funnel)
	23232.0002 *	1	-	Housing, Hood BLK (7.125" Narrow Funnel)
	23232.0004	1	-	Housing, Hood BLK (7.625" Wide Funnel)
	23232.0005	1	-	Housing, Hood SST (7.625" Wide Funnel)
	02308.0000	6	6	Screw #8-32 x .375" PNHD (Hood to Trunk)
	01303.0000	2	1	Screw #4-40 x .50" PNHD (Cover to Hood)
	00916.0000	2	1	Clip J-Type #4-40
3	00670.0000	1	-	Plug BLK Nylon .437" Dia. (Brewers w/o Faucet)
4	00462.0001	-	1	Plug, Slotted Head .125" NPT (Early Models w/Vent Tube)
5	03263.0002	-	1	Sponge Pad w/Adhesive (First Type w/Top Mount Thermostat)
6	12683.0000*	-	2	Cover, Blank (No Longer Available)
	12683.0002*	-	1	Cover, w/Faucet Hole (No Longer Available)
	02371.0000*	-	8	Nut, Thumb #6-32 (No Longer Available)
	00973.0000	-	8	Nut, Keps #6-32 (Later Models)
7	13354.0000	-	1	Swivel Plate w/Funnel Rails
8	01315.0000	4	2	Screw #8-32 x .375" TRSHD (Tank Mount)
	00912.0000	4	2	Clip, J-Type #8-32

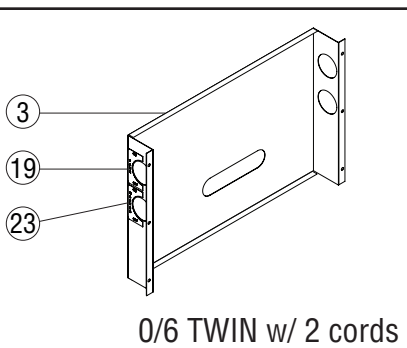
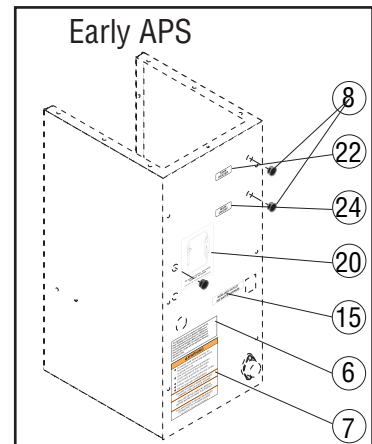
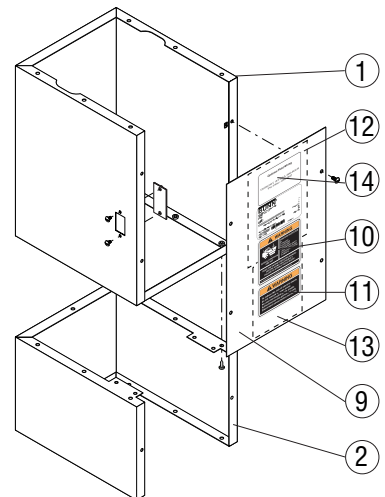
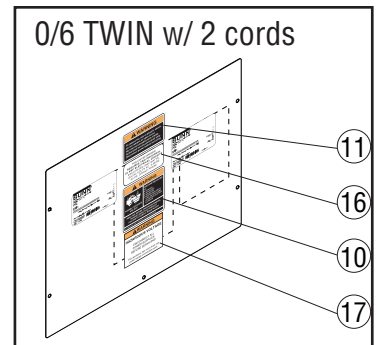
* Indicates the part number listed is for reference only.




All models with receptacle and/or fuse (MV) are no longer available

APS**TWIN-APS**

0/6 TWIN w/ 2 cords

**Early APS****Standard & TC****0/6 TWIN w/ 2 cords**

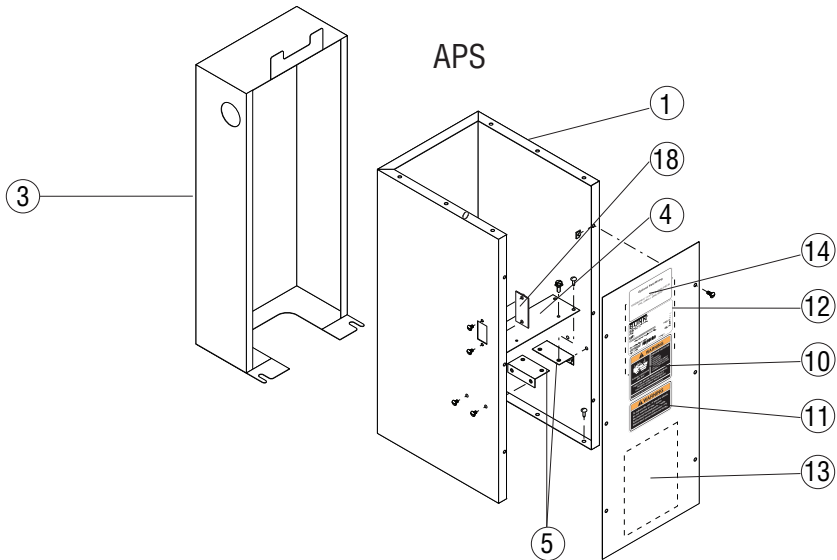
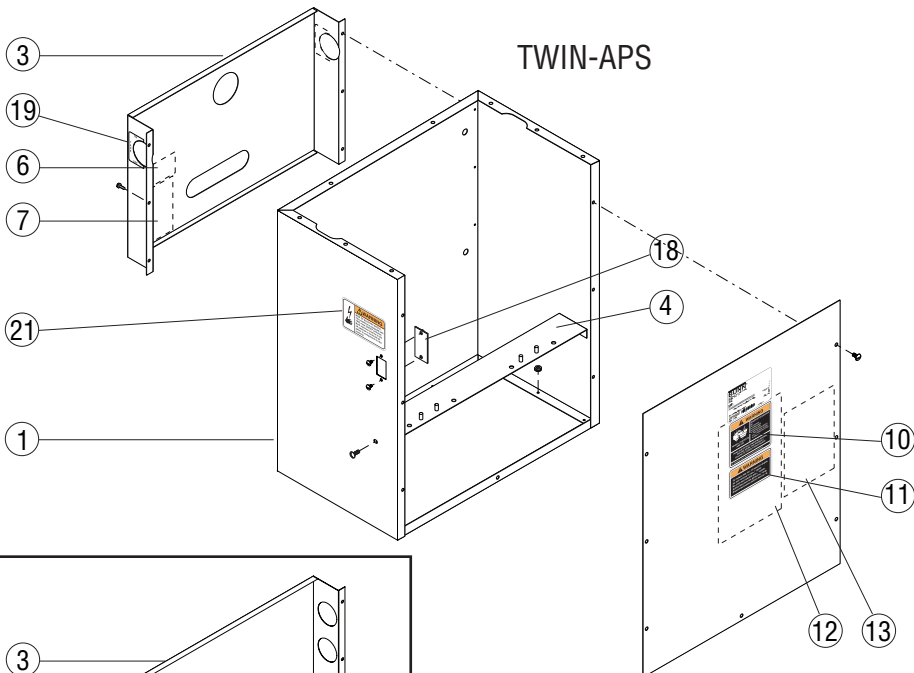
TRUNKS

ITEM	PART NO.	QTY. TWIN	QTY. SINGLE	DESCRIPTION	
1	34061.1006	-	1	Trunk, SST, 11.69" Standard	 <p>No Master ON/OFF Switch</p> <div style="border: 1px solid black; padding: 5px; margin-top: 10px;"> <p>All trunks include decals 00656.0000 & 00831.0000 except 0/6 w/ 2 cords.</p> </div>
	34061.1000	-	1	Trunk, BLK, 11.69" Standard	
	25352.0007	-	1	Trunk, SST, 12.39" TC	
	34208.1002	-	1	Trunk, SST, 18.15" APS	
	23320.1004	-	1	Trunk, BLK, 18.15" APS	
	34061.0013	-	1	Trunk, BLK, 22.16" TS	
	34061.1004	-	1	Trunk, SST, 22.16" TS	
	26285.0000	1	-	Trunk, SST, TWIN APS	
	26285.0001	1	-	Trunk, BLK, TWIN APS	
	26285.0002	1	-	Trunk, SST, TWIN TC	
	23294.0000	1	-	Trunk, SST, All Other TWINS w/1 Power Cord	
	23294.0002	1	-	Trunk, BLK, All Other TWINS w/1 Power Cord	
	23294.0001	1	-	Trunk, SST, 0/6 TWINS (w/2 Power Cords Only)	
	34061.1022	-	1	Trunk, SST, 11.69" Standard (Left Mounted Switch)	
	34061.1035	-	1	Trunk, SST, 11.69" Standard (Right Mounted Switch)	
	34061.1023	-	1	Trunk, BLK, 11.69" Standard	
	34061.1025	-	1	Trunk, SST, 12.39" TC	
	34061.1003	-	1	Trunk, SST, 16.69" Single CW	
	34208.1011	-	1	Trunk, SST, 18.15" APS	
	23320.1012	-	1	Trunk, BLK, 18.15" APS	With Side Mounted Rocker Type Master ON/OFF Switch
	34061.0026	-	1	Trunk, BLK, 22.16" TS	
	26285.0006	1	-	Trunk, SST, TWIN APS	
	26285.0008	1	-	Trunk, BLK, TWIN APS	
	26285.0007	1	-	Trunk, SST, TWIN TC	
	23294.0011	1	-	Trunk, SST, All Other TWINS w/1 Power Cord	
	23294.0008	1	-	Trunk, SST, 0/6 TWINS (w/2 Power Cords Only) (2 Switches)	
	41402.1000	-	1	Trunk, SST, 11.69" Standard	
	41402.1001	-	1	Trunk, BLK, 11.69" Standard	
	41402.1003	-	1	Trunk, SST, 12.39" TC	
	41402.1008	-	1	Trunk, SST, 16.69" Single CW	
	41417.1000	-	1	Trunk, SST, 18.15" APS (120V)	With Rear Mounted Master ON/OFF Toggle Switch
	41417.1001	-	1	Trunk, SST, 18.15" APS (230V CE)	
	41417.1002	-	1	Trunk, BLK, 18.15" APS (Domestic)	
	23294.1010	1	-	Trunk, SST, 0/6 TWINS (Includes # 21) (w/2 Cords Only) (4 Switches)	
	02308.0000	12	9	Screw, PNHD #8-32 x .375" (Trunk to Base)	
	00970.0000	8	-	Nut, Keps #8-32 (Trunk to Base) (TWIN - APS Only)	
	00988.0000	7	6	Fastener, (Tinnerman) "U" Type #6-32	
2	22748.0000	-	1	Extension, SST, 6.5"	
	22748.0001	-	1	Extension, SST, 10.5"	
	22748.0002	-	1	Extension, BLK, 10.5"	
3	28233.0000	-	1	Optional Utility Cover (Fits 18.15" APS Trunks Only)	
	23270.0000	1	-	Utility Cover w/Decals (All Short Twins) (Includes # 6,7,19)	
	41426.1000	1	-	Utility Cover w/Decals (0/6 Twins w/ 2 cords) (Includes # 6,7,19, 23)	
	02332.0002	6	-	Screw, Hex-Crimptite #6 x .38"	
4	26287.0000	1	-	Bracket, Support (APS Only)	
	22733.0000	-	1	Bracket, Support (APS Only)	
	02308.0000	2	4	Screw #8-32 x .375"	

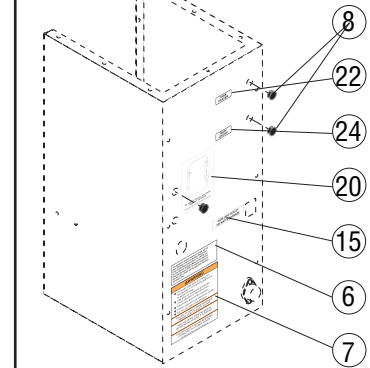
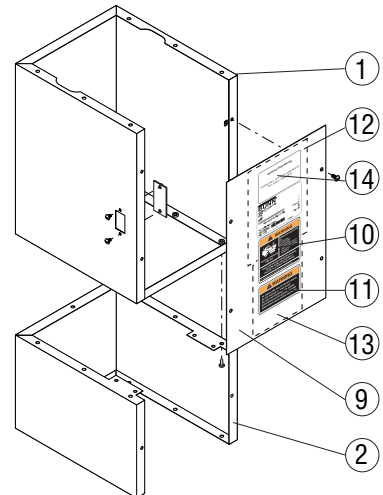
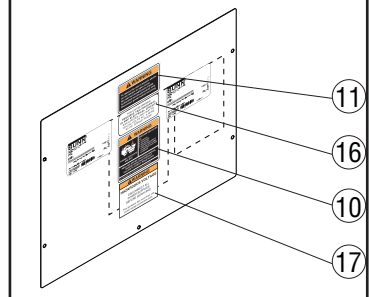
Continued on next page



All models with receptacle and/or fuse (MV) are no longer available

APS**TWIN-APS**

0/6 TWIN w/ 2 cords

Early APS**Standard & TC****0/6 TWIN w/ 2 cords**

TRUNKS

ITEM	PART NO.	QTY. TWIN	QTY. SINGLE	DESCRIPTION
5	27929.0000	-	2	Bracket, (APS Only)
	02308.0000	-	4	Screw #8-32 x .375"
6	00656.0000	1	1	Decal, Compliance To Plumbing Code
7	00831.0000	1	1	Decal, Warning-Electrical
8	00669.0003	-	2	Plug
9	11408.1002	-	1	Panel, SST, 11.625" Standard (Includes # 10-11)
	11408.1005	-	1	Panel, BLK, 11.625" Standard (Includes # 10-11)
	11408.1006	-	1	Panel, SST, 12.375" TC (Includes # 10-11)
	22730.1007	-	1	Panel, SST, 15.63" Single CW (Includes # 10-11)
	22730.1002	-	1	Panel, SST, 18.125" APS (Includes # 10-11)
	22730.1005	-	1	Panel, BLK, 18.125" APS (Includes # 10-11)
	22730.1003	-	1	Panel, SST, 22.125" TS (Includes # 10-11)
	22730.1009	-	1	Panel, BLK, 22.125" TS (Includes # 10-11)
	01382.0000	-	4-6	Screw, SST #6-32 x .375"
	01382.0002	-	4-6	Screw, BLK #6-32 x .375"
	26283.1000	1	-	Panel, SST, TWIN APS (Includes # 10-11)
	26283.1001	1	-	Panel, BLK, TWIN APS (Includes # 10-11)
	23267.1000	1	-	Panel, SST, All Other TWINS w/One Power Cord (Includes # 10-11)
	24249.0003	1	-	Panel, SST, All 0/6 TWINS w/Two Power Cords (Includes # 10-12,16,17)
	23267.1001	1	-	Panel, BLK, All Other TWINS (Includes # 10-11)
	01315.0000	5-7	-	Screw, SST #8-32 x .375"
	01315.0005	5-7	-	Screw, BLK #8-32 x .375"
10	00658.0000	1	1	Decal, Warning-Decanter/Funnel
11	37881.0000	1	1	Decal, No User Serviceable Parts
12	10836.0000	-	1	Schematic, C, CWT, CWTF-15, 20, 35, 120V, 120/208-240V
	10836.0005	-	1	Schematic, C, CWT, CWTF-MV
	10836.0009	-	1	Schematic, C, CWT, CWTF-DV
	10836.0010	-	1	Schematic, APS/TC/TS-DV
	10836.0011	-	1	Schematic, Single CW
	10693.0000	-	1	Schematic, APS/TC/TS-12, 20, 35 (Mechanical T'Stat)
	10693.0001	-	1	Schematic, APS/TC/TS-12, 20, 35 (Electronic T'Stat)
	10693.0002	-	1	Schematic, APS/TC/TS-MV
	10867.0000	1	-	Schematic, 2/2,4/2 Twins w/Optional Recovery Booster
	27693.0000	1	-	Schematic, 0/6 Twins (Mechanical T'Stat, Fresh Timer & Booster)
	10847.0000	1	-	Schematic, 0/6 Twins w/Two Power Cords
	10736.0000	1	-	Schematic, All Other Twins
13	32540.0000	1	1	Decal, Digital Timer Setting
14	28181.0000	-	1	Decal, Optional Field Wiring (3 Warmer) (MV Only)
	28181.0001	-	1	Decal, Optional Field Wiring (1 Warmer) (MV Only)
	28181.0002	-	1	Decal, Optional Field Wiring (APS-MV Only)
	34955.0000	-	1	Decal, Optional Field Wiring (TC/APS-DV Only)
	34955.0001	-	1	Decal, Optional Field Wiring (1 Warmer) (DV Only)
	34955.0002	-	1	Decal, Optional Field Wiring (2 Warmer) (DV Only)
	34955.0003	-	1	Decal, Optional Field Wiring (3 Warmer) (DV Only)
15	02822.0000	-	1	Decal, 200 Watts Maximum
16	12183.0002	1	-	Decal, 20 amp Electrical Circuit (Brewers with two Power Cords Only)



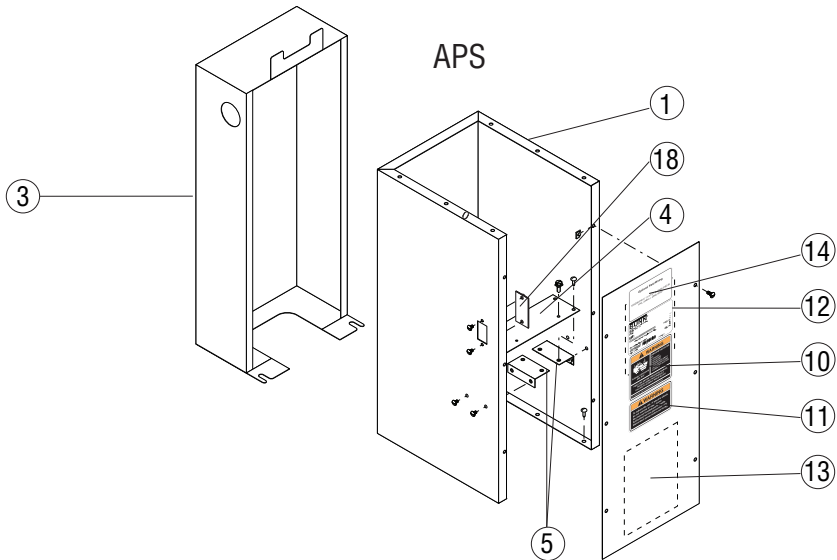
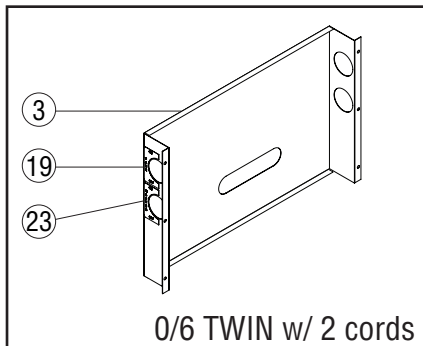
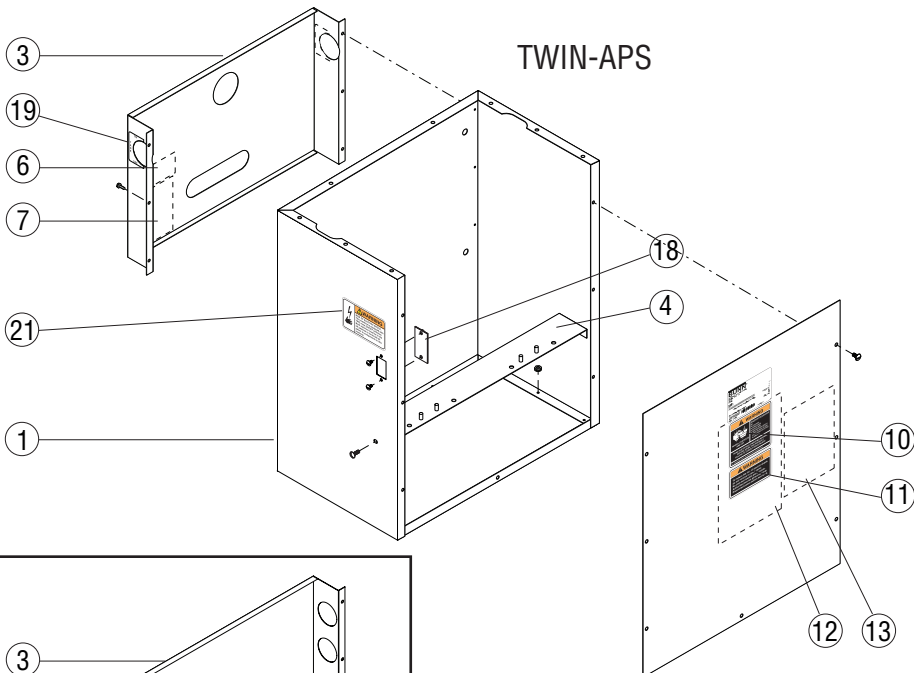
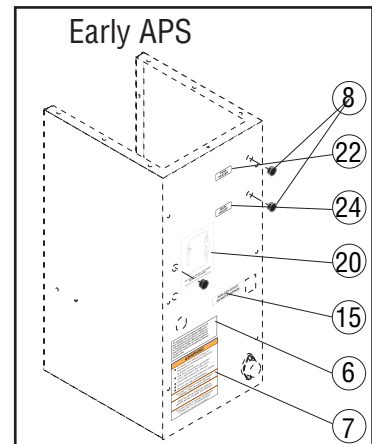
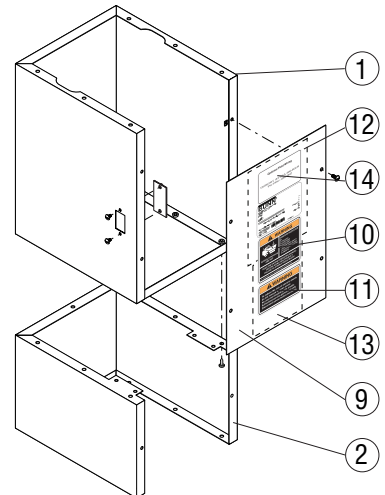
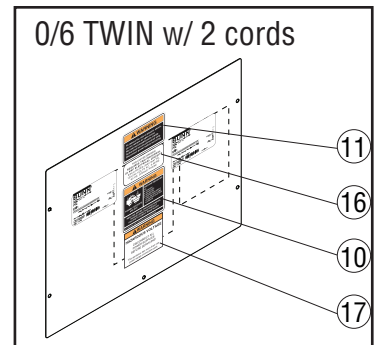
All front panels include decals
00658.0000 & 37881.0000

Continued on next page

* Indicates the part number listed is for reference only.

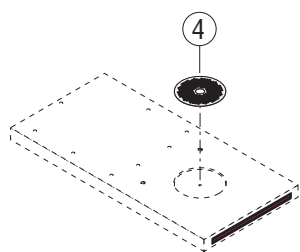
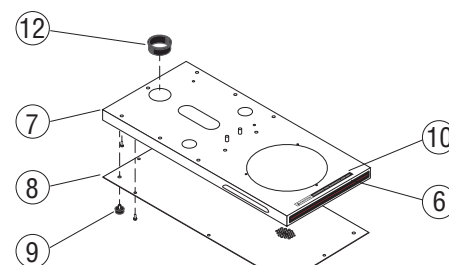
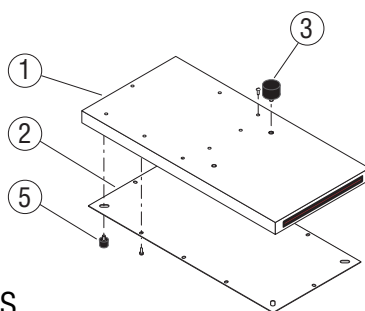
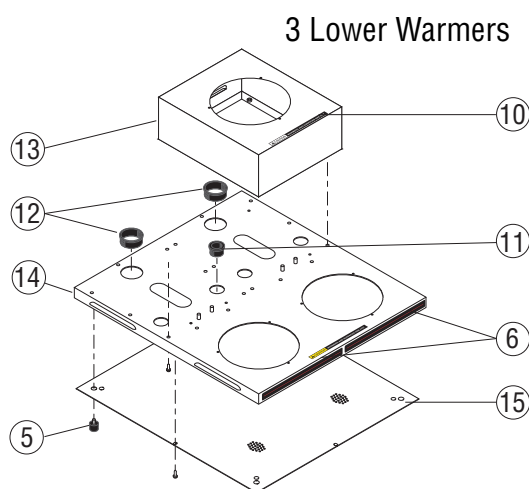
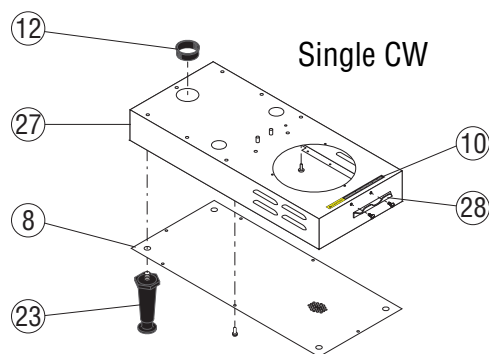
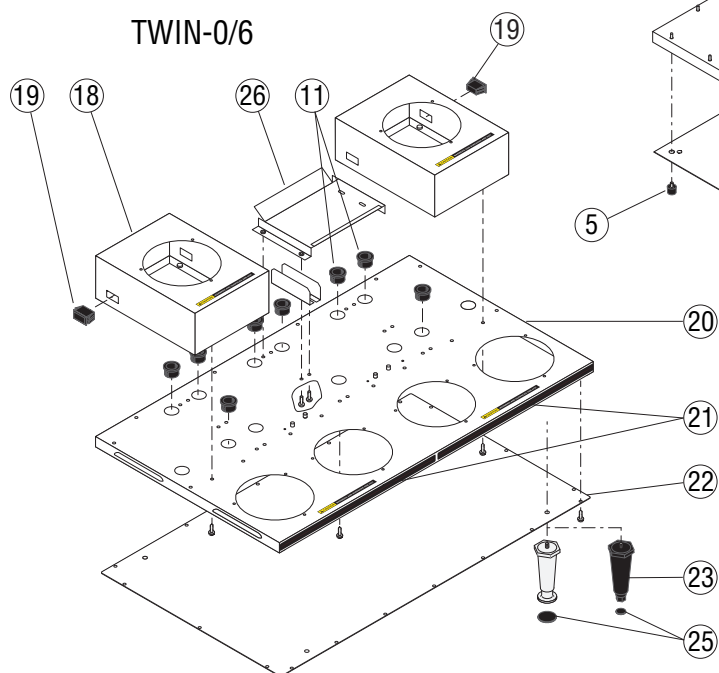
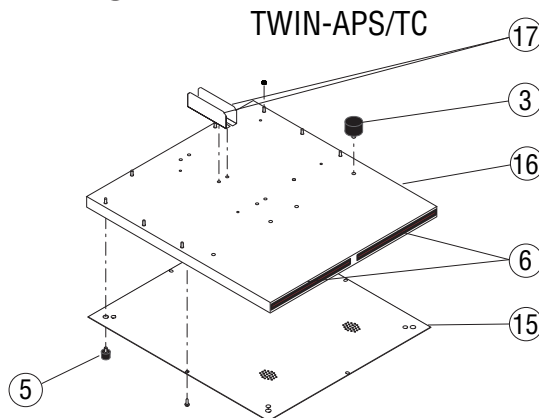
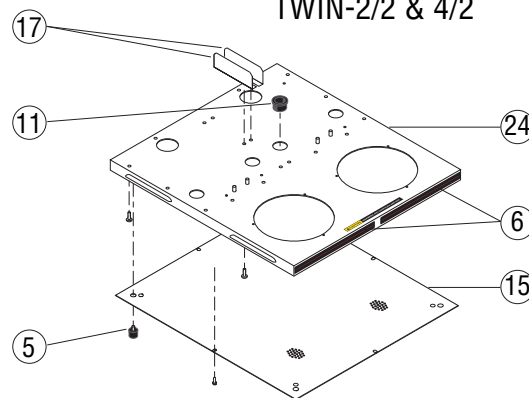


All models with receptacle and/or fuse (MV) are no longer available

APS**TWIN-APS****Early APS****Standard & TC****0/6 TWIN w/ 2 cords**

TRUNKS

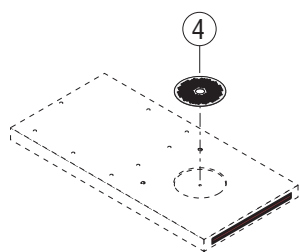
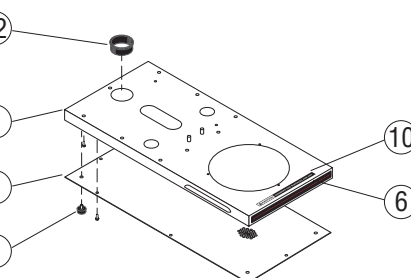
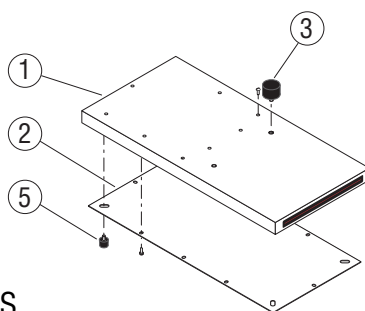
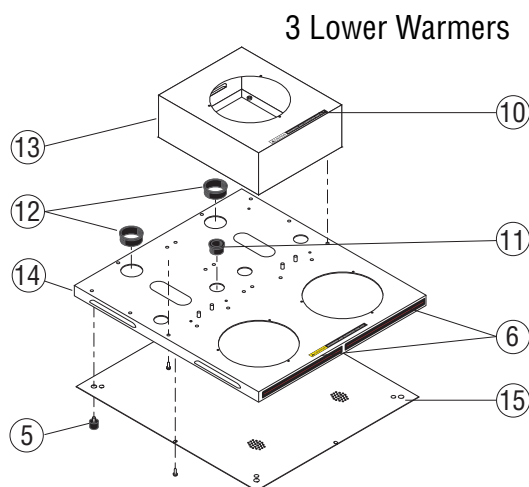
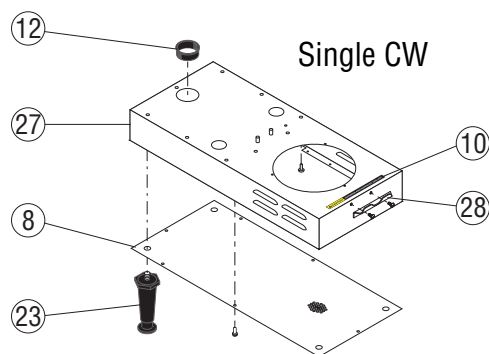
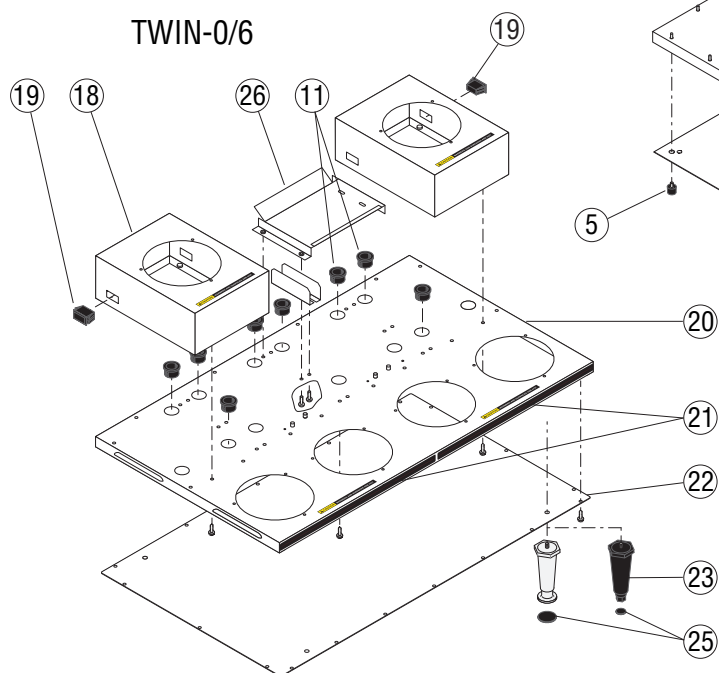
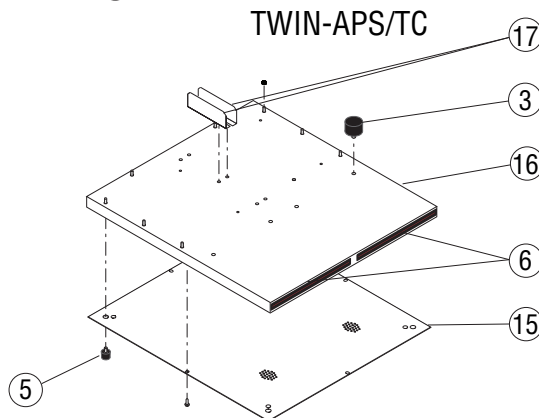
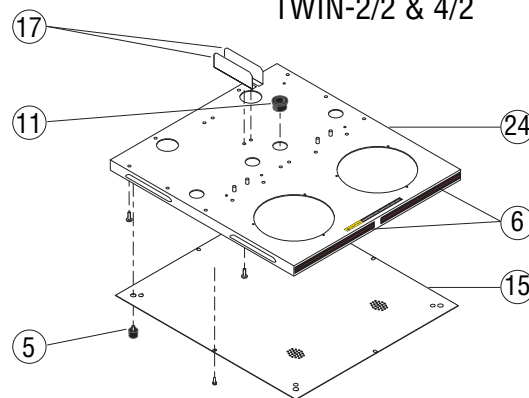
ITEM	PART NO.	QTY. TWIN	QTY. SINGLE	DESCRIPTION
17	12104.0000	1	-	Decal, Warning-Power Supply (<i>Brewers with two Power Cords Only</i>)
18	38820.0000	1	1	Plate, Switch Cover (<i>Models w/out Power Switch</i>)
	01308.0002	2	2	Screw SST #6-32 x .25"
	01308.0003	2	2	Screw BLK #6-32 x .25"
19	24213.0000	1	-	Decal, Tank Heater (Includes Left & Right Decals)
20	10165.0000	-	1	Decal, Strainer/Flow Control (w/o Needle Valve)
	10447.0000	-	1	Decal, Strainer/Flow Control (w/Needle Valve)
	24540.0000	-	1	Decal, Strainer/Flow Control 2nd Type (Center Tap & Needle Valve)
	26225.0000	-	1	Decal, Strainer/Flow Control 3rd type (One Piece Strainer/Flow Control)
21	40124.0000	(2)	-	Decal, Warning-ON/OFF Switch x 2 (<i>0/6 Twins with two Power Cords Only</i>)
22	39806.0000	-	1	Decal, Tank Heater
23	41427.0000	2	-	Decal, Master ON/OFF (Includes Left & Right Decals)
24	41405.0000	-	1	Decal, Master ON/OFF

**APS/TC/TS****1 Lower Warmer****3 Lower Warmers****Single CW****TWIN-0/6****TWIN-APS/TC****TWIN-2/2 & 4/2**

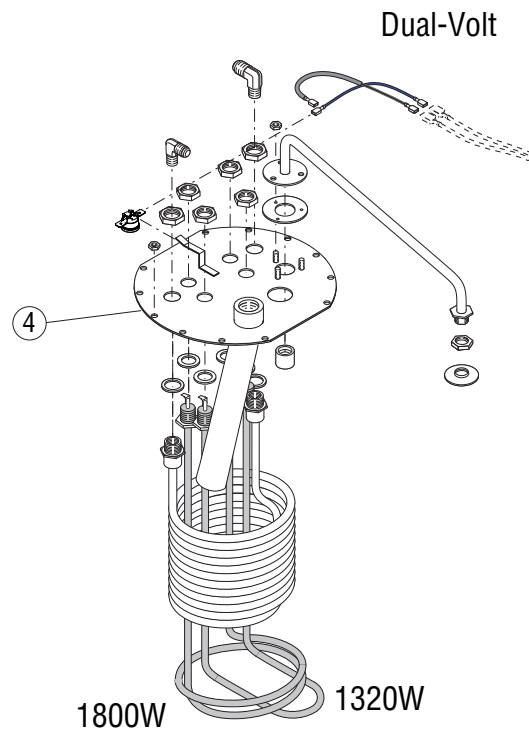
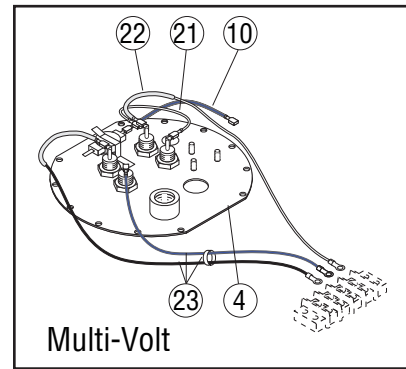
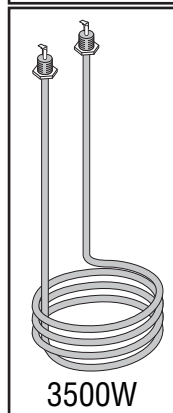
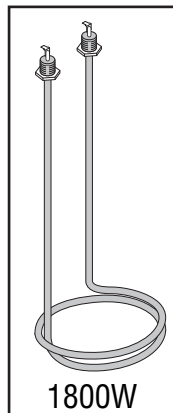
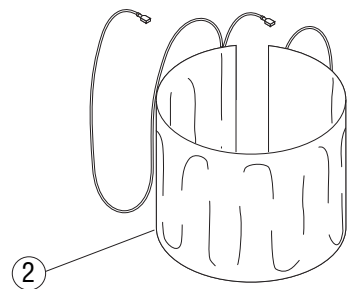
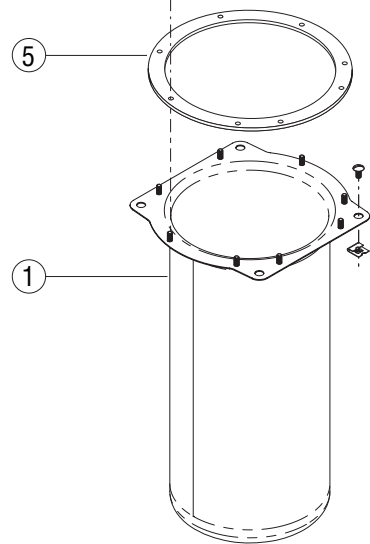
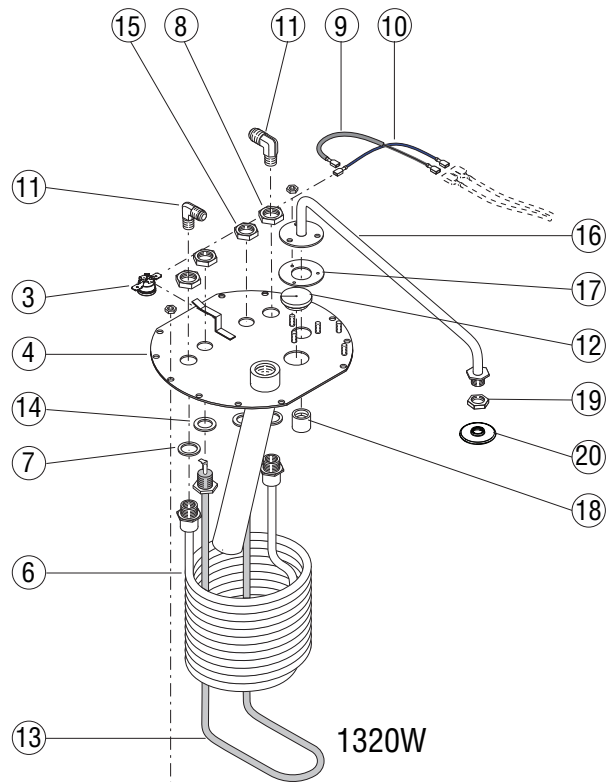
BASES				
ITEM	PART NO.	QTY. TWIN	QTY. SINGLE	DESCRIPTION
1	23321.0000	-	1	Base W/decals, Sst (Includes Item 6) Aps
	23321.0001	-	1	Base W/decals, Sst (Includes Item 6) Ts
	23321.0002	-	1	Base W/decals, Sst (Includes Item 6) Aps (Ce)
	23321.0003	-	1	Base W/decals, Sst (Includes Item 6) Ts (Ce)
	23321.0004	-	1	Base W/decals, Blk (Includes Item 6) Aps
2	22999.0000	-	1	Plate, Base APS/TC/TS
	02332.0002	-	8	Screw, Hex-crimptite #6-32 X .375"
3	00754.0001	4	2	Locator
4	22740.0000	-	1	Drip Shield, (Early Models Only)
5	25137.0001	-	4	Foot .75od X .48ht X .25thd
	24600.0000	-	-	Set Of 4 Feet
6	22306.0000	2	1	Decal, Red Decorative Stripe
7	25351.0000	-	1	Base, 1 Warmer W/decals, Sst (Includes Items 6 & 10)
	25351.0001	-	1	Base, 1 Warmer W/decals, Sst (Includes Items 6 & 10) (Ce)
	25351.0002	-	1	Base, 1 Warmer W/decals, Blk (Includes Items 6 & 10)
8	24805.0000	-	1	Plate, Base 1 Warmer
	24805.0002	-	1	Plate, Base 1 Warmer (Single CW)
	02332.0002	-	6	Screw, Hex-crimptite #6-32 X .375"
9	25137.0000	-	4	Foot .75od X .25ht X .25thd
	35712.0000	-	-	Set Of 4 Feet
10	12364.0000	#	#	Decal, Caution-warmers/surfaces Are Hot (Refer To Illustration For Qty.)
11	01592.0000	#	#	Bushing, Snap 1" (Refer To Illustration For Qty.)
12	01593.0000	#	#	Bushing, Snap 1.5" (Refer To Illustration For Qty.)
13	25658.0000	-	1	Housing, Side Warmer Sst (Includes Item 10)
	25658.0002	-	1	Housing, Side Warmer Blk (Includes Item 10)
	02308.0000	-	7	Screw, #8-32 X .375"
14	25657.0000	-	1	Base, 3 Warmers W/decals, Sst (Includes Items 6 & 10)
	25657.0001	-	1	Base, 3 Warmers W/decals, Sst (Includes Items 6 & 10) Ce
	25657.0002	-	1	Base, 3 Warmers W/decals, Blk (Includes Items 6 & 10)
15	12667.0001	-	1	Plate, Base 3 Warmers
16	26413.0000	1	-	Base W/decals, Sst (Includes Item 6) Twin-aps
	26413.0001	1	-	Base W/decals, Blk (Includes Item 6) Twin-aps
17	26953.0000	2	-	Guard, Wiring
	02308.0000	4	-	Screw, #8-32 X .375"
18	23698.1000	2	-	Housing, Side Warmer Sst (Includes Item 10)
	23698.1001	2	-	Housing, Side Warmer Blk (Includes Item 10)
	02308.0000	14	-	Screw, #8-32 X .375"
19	12921.0000	2	-	Switch Blank

Continued on next page

* Indicates the part number listed is for reference only.

**APS/TC/TS****1 Lower Warmer****3 Lower Warmers****Single CW****TWIN-0/6****TWIN-APS/TC****TWIN-2/2 & 4/2**

BASES				
ITEM	PART NO.	QTY. TWIN	QTY. SINGLE	DESCRIPTION
20	24253.0001	1	-	Base W/decals, Sst (Includes # 10 & 21) Twin 0/6
	24253.0002	1	-	Base W/decals, Blk (Includes # 10 & 21) Twin 0/6
	02308.0000	12	-	Screw, #8-32 X .375"
21	24230.0000	2	1	Decal, Red Decorative Stripe
22	23329.0000	1	-	Plate, Base, Twin 0/6
	02332.0002	18	-	Screw, Hex-crimptite #6-32 X .375"
23	00511.1000	1 Set	-	Legs, 4" Adjustable, Satin Nickel, .25"-20 (Includes # 25)
	13255.0005	1 Set	-	Legs, 4" Adjustable, Black Plastic, .25"-20 (Includes # 25)
	26528.0001	-	4	Legs, 4" Adjustable, Black Plastic, .25"-20 (Single CW)
24	24253.0000	1	-	Base W/decals, Sst (Includes Items 6 & 10) Twin 2/2 & 4/2
	24253.0003	1	-	Base W/decals, Blk (Includes Items 6 & 10) Twin 2/2 & 4/2
	02308.0000	12	-	Screw, #8-32 X .375"
25	03996.0000	4	-	Pad, 1.25"
	03993.0000	4	-	Pad, .70"
26	27623.0000	1	-	Guard, Wiring - Right (Brewers with two Power Cords Only)
	02308.0000	2	-	Screw, #8-32 X .375"
27	34065.1001	-	1	Base W/decals, Sst (Includes # 10 & 28) Single CW
28	21104.0003	-	1	Server Stop (Single CW Only)
	01347.0000	-	2	Screw, Truss Head #6-32 x .375"

BUNN®**TANK AND COMPONENTS****C/CT/CWTF
Series**

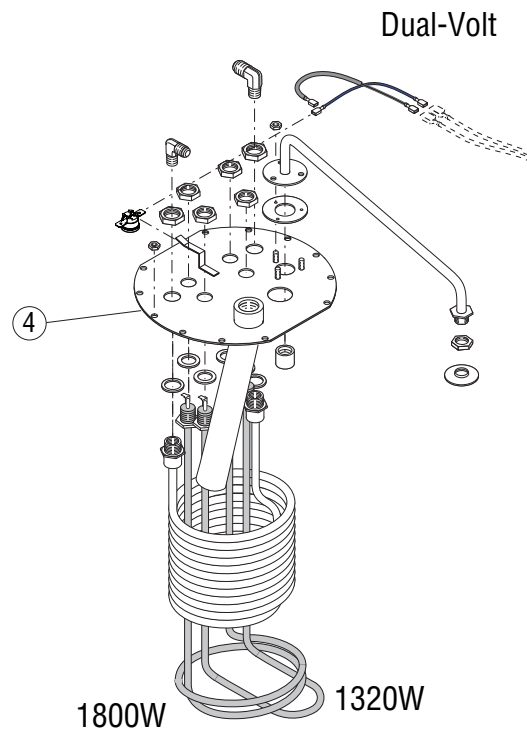
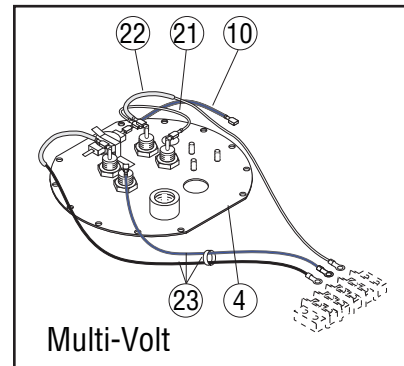
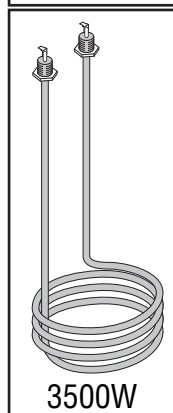
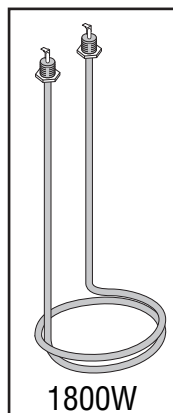
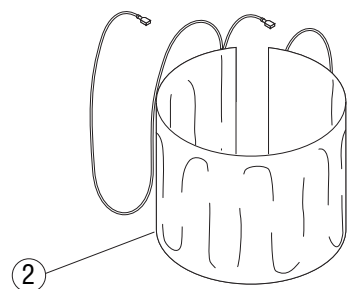
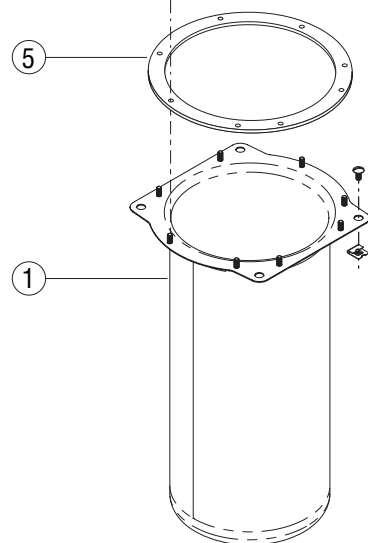
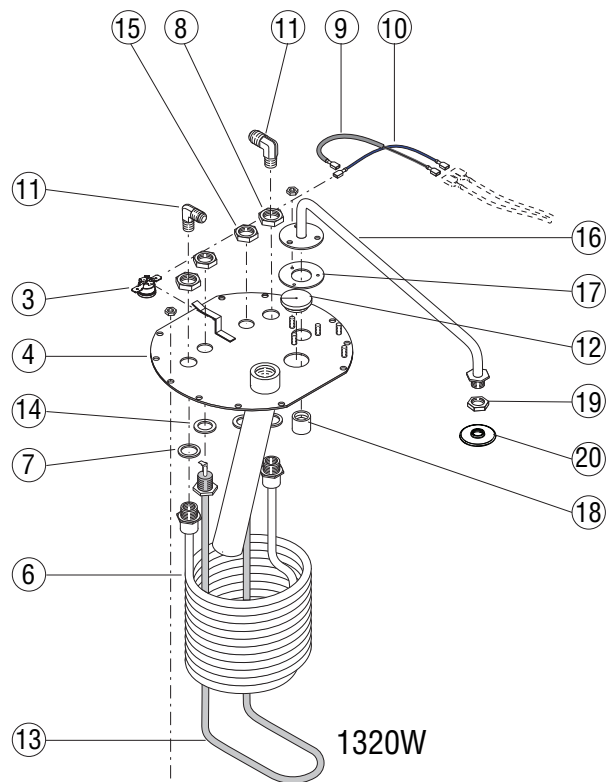
TANK AND COMPONENTS

ITEM	PART NO.	QTY. TWIN	QTY. SINGLE	DESCRIPTION
1	04118.0000	2	1	Tank
	20201.3000	-	1	Tank (Single CW)
	01315.0000	4	2	Screw #8-32 x .375" TRSHD
	00912.0000	4	2	Clip, J-Type #8-32
2	04260.0000	2	1	Blanket Warmer 50W, 120V
	01927.0000	2	1	Blanket Warmer 50W, 220V
3	29329.1000	2	1	Thermostat, Limit
4	25158.0000	1	1	Tank Lid (1 HTR, No Faucet) (Twin Right)
	25158.0001	1	1	Tank Lid (1 HTR, w/Faucet) (Twin Left) (Single CW)
	25158.0002	-	1	Tank Lid (1 HTR, No Faucet) (Single CW)
	25158.0004	-	1	Tank Lid (DV/MV, w/Faucet)
	00908.0000	16	8	Nut, Hex #8-32
5	04221.0000	2	1	Gasket, Tank Lid
6	12689.1000	1	1	Coil Assy, Faucet (Includes # 7)
7	12688.0000	2	2	Gasket, Water Coil
8	12687.0000	2	2	Nut, Hex Brass .562"-24 (Water Coil)
9	20211.0100	1	1	Thermal Cut Off (TCO) (Thermostat to Heater) w/Faucet
	23769.0000	1	1	Lead, Electrical BLK (Thermostat to Heater) w/o Faucet
10	23768.0000	2	1	Lead, Electrical BLU (Thermostat to Limit)
11	00400.0001	4	2	Elbow, Male .250" Flare x .125" MPT
12	-----	-	-	(See Electrical Section)
13	03070.1001	-	1	Tank Heater, 1500W 120V (Single CW-15)
	04236.1000	-	1	Tank Heater, 1320W 120V (CWTF-15 & MV/DV)
	04636.1000	-	1	Tank Heater, 1800W 120V (CWTF-20 & MV/DV)
	01925.1000	-	1	Tank Heater, 1850W 220V (CWTF-20)
	04637.1000	2	1	Tank Heater, 3500W 240V (CWTF-35 & Twins)
	20201.0750	-	1	Tank Heater, 3500W 240V (Single CW-35)
	20941.1000	-	1	Tank Heater, 3500W 200V (CWTFB-35)
	23929.1000	2	-	Tank Heater, 1600W 200V (CWTFB-2/2 Twin)
	24217.1000	2	-	Tank Heater, 1800W 230V (CWTF-2/2 Twin)
	23930.1000	2	-	Tank Heater, 3000W 240V (Twins-CE)
14	00943.0000	4	2	Gasket, Tank Heater
15	00942.0000	4	2	Nut, Brass .5"-20 (Tank Heater)
16	11431.0002	2	1	Sprayhead Tube Kit (Includes 3 mounting nuts below & # 17 & 18)
	00908.0000	6	3	Nut, Hex #8-32
17	05515.0000	2	1	Gasket, Sprayhead tube
18	05518.0000	2	1	Hub, Syphon
19	01075.0000	2	1	Nut, Hex .438"-20, Sprayhead tube

Includes # 14

Continued on next page

* Indicates the part number listed is for reference only.

BUNN®**TANK AND COMPONENTS****C/CT/CWTF
Series**

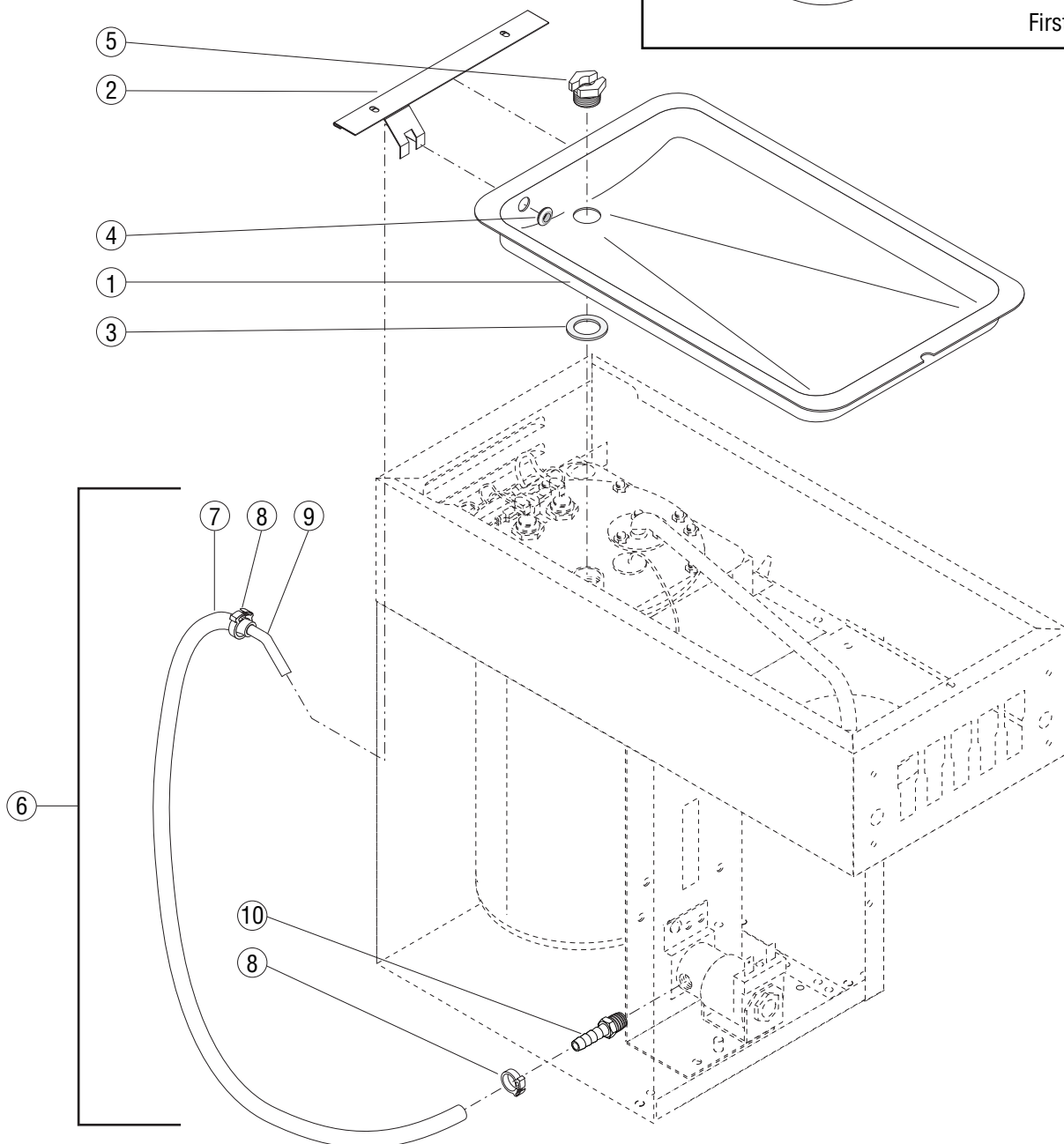
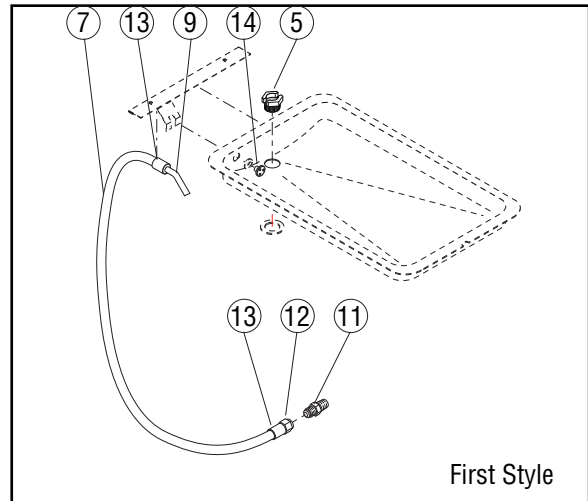
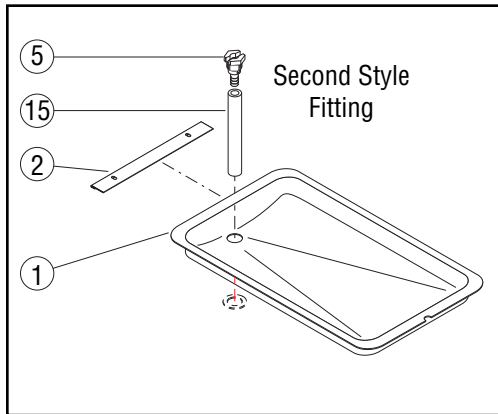
TANK AND COMPONENTS

ITEM	PART NO.	QTY. TWIN	QTY. SINGLE	DESCRIPTION
20	01082.0000	2	1	Sprayhead, 6-Hole (6-.078 Standard)
	01082.1000	#	#	3 Pack, 6-Hole (6-.078 Standard)
	01082.0004	2	1	Sprayhead, 5-Hole (5-.070 Optional)
	01082.0005	2	1	Sprayhead, 5-Hole (5-.057 Optional)
	01082.0007	2	1	Sprayhead, 1-Hole (1-.182 Pouch-Pack Funnel)
21	28242.0000	-	1	Lead, Electrical WHI (Tank Heater Jumper)
22	28173.0000	-	1	Thermal Cut Off (Tank Heater to Upper Terminal Block)
23	28174.0000	-	1	Thermal Cut Off Harness (Tank Heater to Upper Terminal Block)

The Following Items Are Not Illustrated

24	22918.0000	-	1	TCO 128°C Male - Female (CE)	} Includes # 1 & 2
	22918.0001	-	1	TCO 291°C Male - Female (CE)	
25	04776.0000	-	1	TCO 128°C Male - Female (CE)	
	20211.0100	-	1	TCO 167°C Female - Female BLK (CE)	
26	04119.0000	1	1	Tank W/Blanket Warmer, 120V	
	04133.0000	1	1	Tank W/Blanket Warmer, 220V	
27	25319.1000	-	1	Tank Assy, 1320W 120V (Includes # 1-5,9,10,13-18) w/o Faucet	
	25319.1001	-	1	Tank Assy, 1800W 120V (Includes # 1-5,9,10,13-18) w/o Faucet	
	25319.1002	1	1	Tank Assy, 3500W 120/240V (Includes # 1-5,9,10,13-18) w/o Faucet	
	25319.1010	1	-	Tank Assy, 3000W 120/240V (Includes # 1-5,9,10,13-18) w/o Faucet	
	-----*	-	1	Tank Assy, 1850W 220V (Includes # 1-5,9,10,13-18) w/o Faucet	
	-----*	1	1	Tank Assy, 3500W 240V (Includes # 1-5,9,13-18) w/o Faucet	
	25320.1000	-	1	Tank Assy, 1320W 120V (Includes # 1-11,13-18) w/Faucet	
	25320.1001	-	1	Tank Assy, 1800W 120V (Includes # 1-11,13-18) w/Faucet	
	25320.1002	1	1	Tank Assy, 3500W 240V (Includes # 1-11,13-18) w/Faucet	
	25320.1007	1	1	Tank Assy, 3000W 120/240V (Includes # 1-11,13-18) w/Faucet	
	25320.1012	-	1	Tank Assy, 3500W 240V (Includes # 1-11,13-18) w/Faucet	
	25320.1017	-	1	Tank Assy, 1320/1800W DV (Includes # 1-11,13-18, 24-25) w/Faucet	

* Indicates the part number listed is for reference only.

BUNN®**FILL BASIN AND LINES****C/CT/CWTF
Series**

P3914

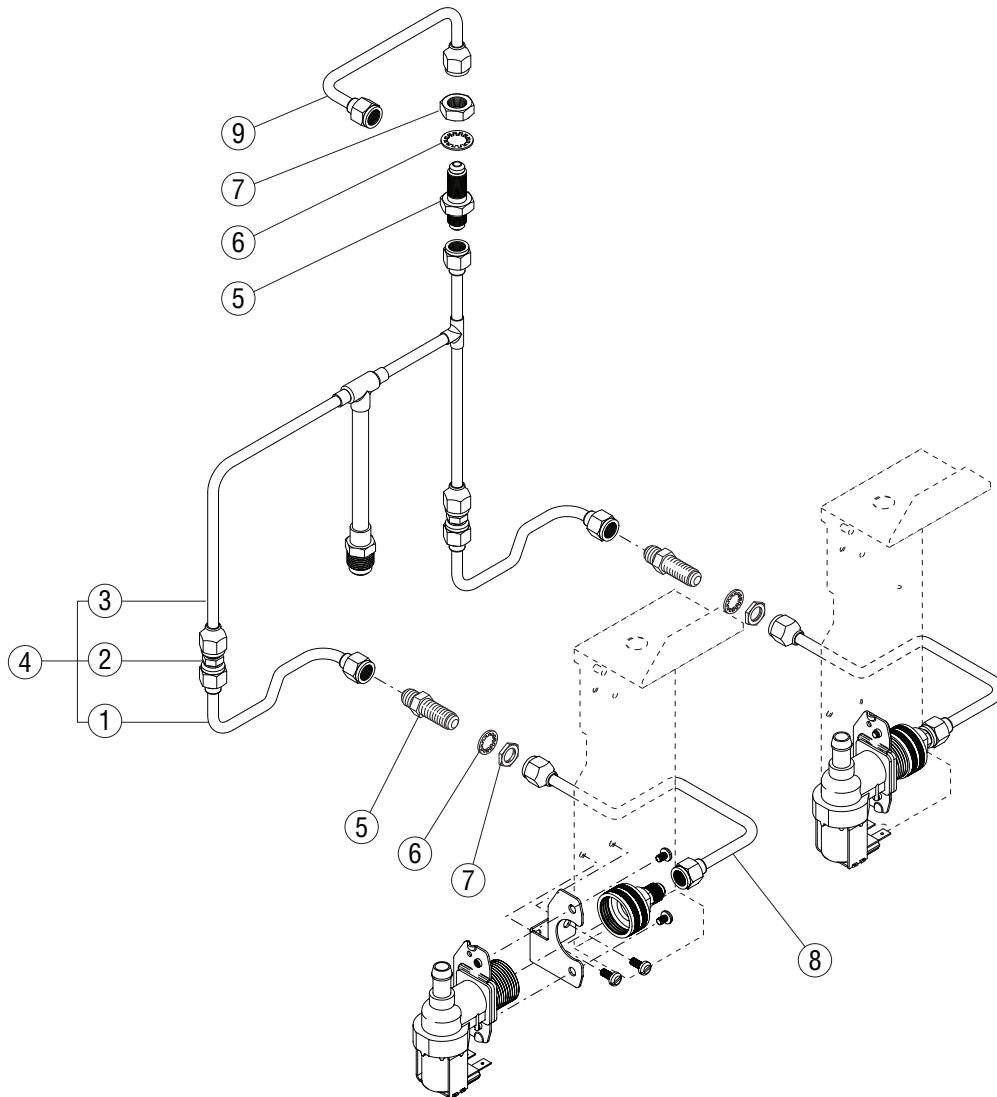
FILL BASIN AND LINES

ITEM	PART NO.	QTY. TWIN	QTY. SINGLE	DESCRIPTION
1	04270.0002	2	1	Fill Basin (Automatics)
	04270.0000	-	1	Fill Basin (Pour Overs)
2	27514.0000	2	1	Plate, Splash Guard (Automatics and Early Model Pour Overs)
	11424.0000	-	1	Plate, Splash Guard (Late Model Pour Overs)
3	01201.0000	2	1	Gasket, Tank Inlet
4	12928.0000	2	1	Grommet, Pour-In Basin (Automatics and Early Model Pour Overs)
5	01200.0000	2	1	Fitting, Tank Inlet .562" Opening (First Style) (Order 01212.0001)
	32063.0000	2	1	Fitting, Tank Inlet .312" Opening (Second Style) (Order 01212.0001)
	01212.0000	2	1	Fitting, Tank Inlet .382" Opening (Third Style) (Order 01212.0001)
	01212.0001	2	1	Fitting, Tank Inlet Tapered Opening (Fourth Style)
6	12914.0002	2	1	Tube Assy. Fill 21.5" Second Style (Includes # 4, 7-10)
7	11707.0003*	2	1	Tube, .25" Dia. x 21.5" (Order # 16)
8	12422.0000	4	2	Clamp, SNP - 6
9	12913.0000	2	1	Tube
10	22397.0001	2	1	Fitting, .25" Barb x .125" MPT (Late Models)
11	00402.0001	2	1	Fitting, .25" Flare x .125" MPT (Early Modeels)
12	00425.1000	2	1	Fitting, Swivel Nut
13	00419.0000	4	2	Ferrule, Crimp Type .25"
14	01426.0000*	-	1	Weld Pin, .25" Dia. (Early Model Pour Overs Only)
15	28526.0021*	2	1	Tube, .313" Dia. x 4.0" (Order 17)

The Following Items Are Not Illustrated

16	11707.1000	-	-	Tube, .25" Dia. x 12"
	11707.1001	-	-	Tube, .25" Dia. x 36"
	11707.1002	-	-	Tube, .25" Dia. x 120"
17	28526.1000	-	-	Tube, .313" Dia. x 12"
	28526.1001	-	-	Tube, .313" Dia. x 36"
	28526.1002	-	-	Tube, .313" Dia. x 60"
	28526.1003	-	-	Tube, .313" Dia. x 120"

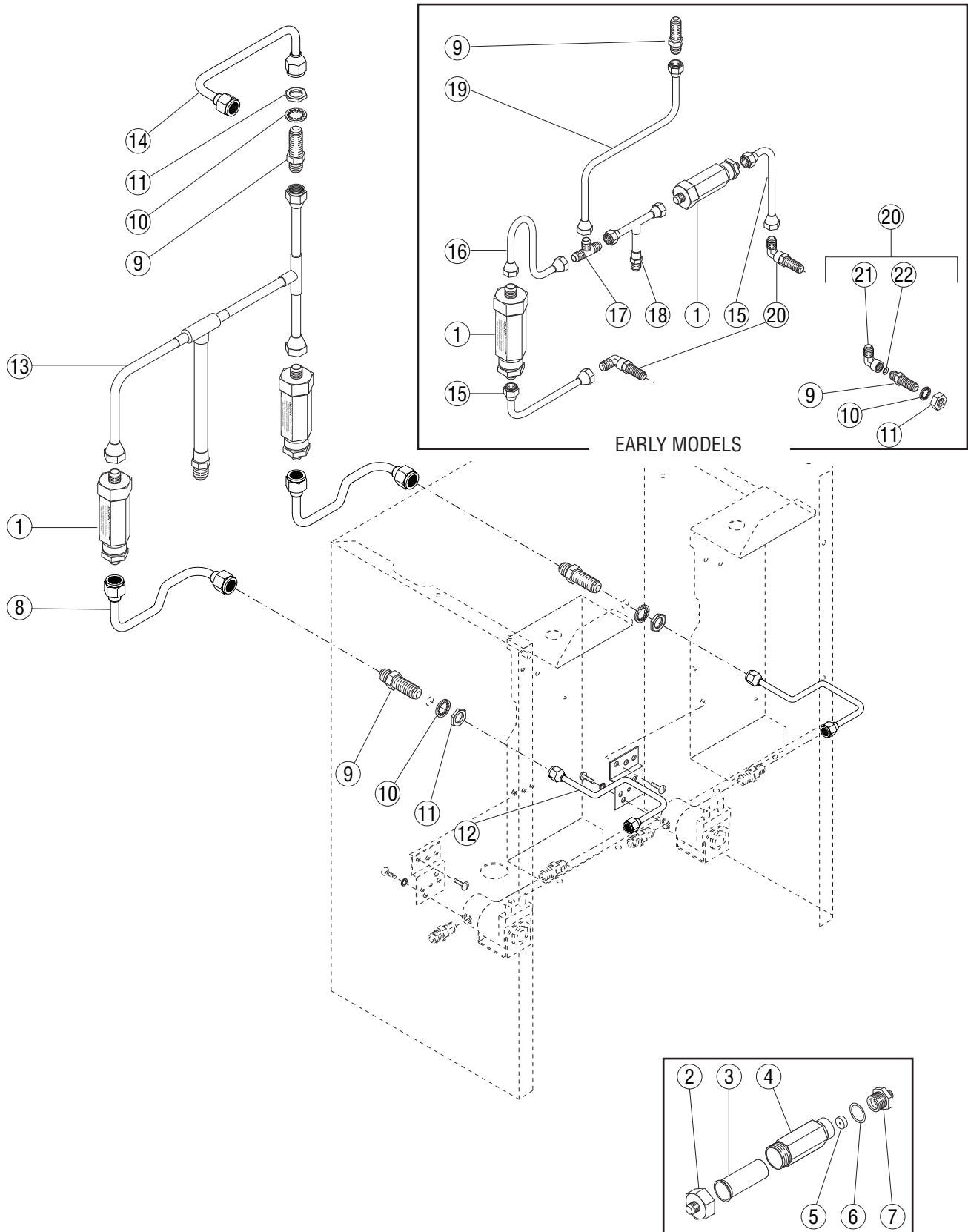
* Indicates the part number listed is for reference only.



MANIFOLD AND LINES - LATER TWINS

ITEM	PART NO.	QTY. TWIN	QTY. SINGLE	DESCRIPTION
1	33643.0000	2	-	Tube, Manifold to Bulkhead
2	00436.0001	2	-	Union, Tn Pl-.250 Flare Male
3	41268.0000*	1	-	Tube Assy, Manifold (Not available, order item 4)
4	41267.0000	1	-	Tube Assy, Manifold (Late Models)
5	00459.0000	3	-	Fitting, Bulkhead .250" Flare
6	01532.0000	3	-	Lockwasher, Internal Tooth .438" I.D.
7	00463.0000	3	-	Nut, Hex .438"-20
8	41281.0000	2	-	Tube, Bulkhead to Solenoid
9	23413.0000	1	-	Tube Assy, Bulkhead to Coil (Faucet)

* Indicates the part number listed is for reference only.

BUNN®**STRAINER/FLOW CONTROL AND LINES - EARLY TWINS****C/CT/CWTF
Series**

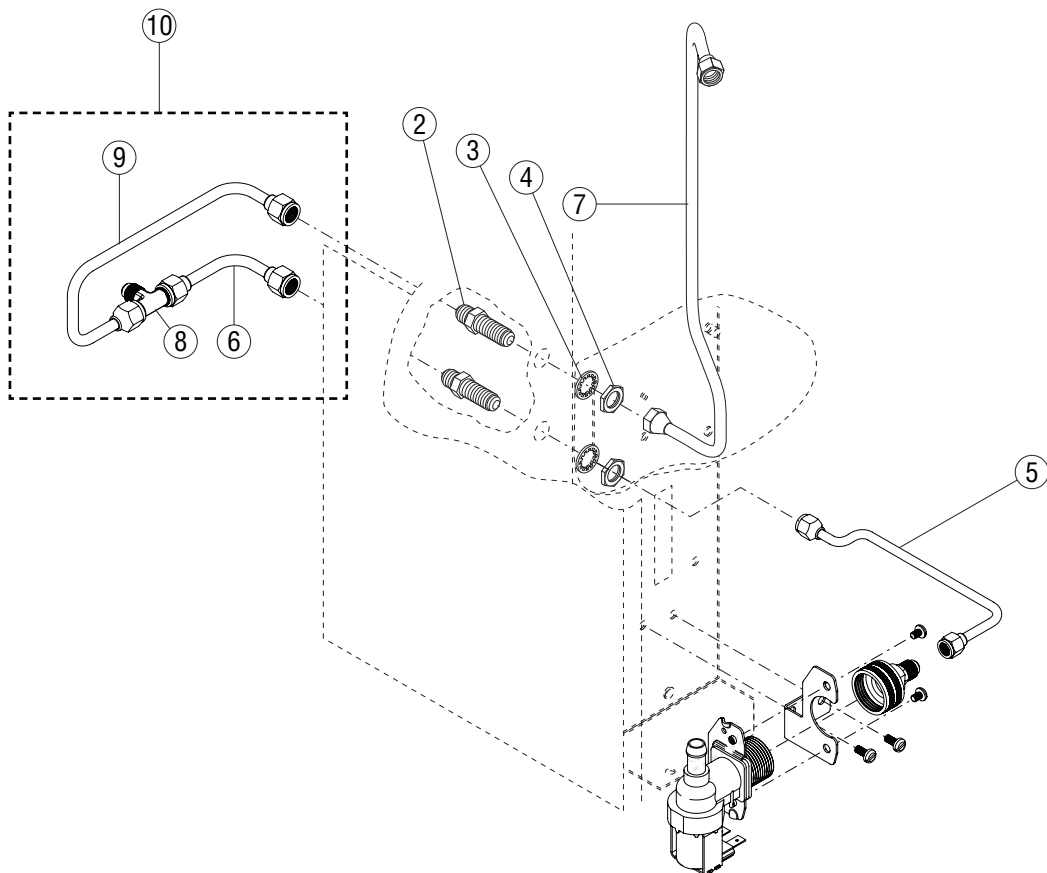
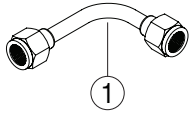
P3915.5

STRAINER/FLOW CONTROL AND LINES - EARLY TWINS

ITEM	PART NO.	QTY. TWIN	QTY. SINGLE	DESCRIPTION
1	22300.0222	2	1	Strainer/Flow Control Assy .222 GPM (Includes # 2 - 7)
2	22249.0000	2	1	Cap
3	23721.0000	2	1	Screen
4	22312.0000*	2	1	Housing (Order # 1)
5	20526.1222	2	1	Flow Washer/Gasket Set, .222 GPM (Includes # 6)
6	01155.0000	2	1	Gasket
7	01154.0000	2	1	Fitting, Flow Control Outlet
8	33643.0000	2	-	Tube, Strainer/Flow Control to Bulkhead (Late Models)
9	00459.0000	3	1	Fitting, Bulkhead .250" Flare
10	01532.0000	3	1	Lockwasher, Internal Tooth .438" I.D.
11	00463.0000	3	1	Nut, Hex .438"-20
12	41281.0000	2	-	Tube, Bulkhead to Solenoid
13	33637.0000	1	-	Tube Assy, Manifold (Late Models)
14	23413.0000	1	-	Tube Assy, Bulkhead to Coil (Late Models)
15	21814.0011	2	-	Tube Assy, Strainer/Flow Control to Bulkhead Fittings (Early Models)
16	26318.0000	1	-	Tube Assy, Tee to Left Strainer/Flow Control (Early Models)
17	20577.0001	1	-	Tee .25" Flare (Early Models)
18	24220.0000	1	-	Tube Assy (Early Models)
19	26301.0000	1	-	Tube Assy, Tee to Bulkhead (Early Models)
20	23924.0000	2	-	Fitting Assy, 90° Bulkhead .250" Flare (Early Models)
21	23925.0000	2	-	Elbow, 90° Tube .25"OD to .25" Fem Flare
22	24684.0000	2	-	Gasket, .25" Flare (Copper)

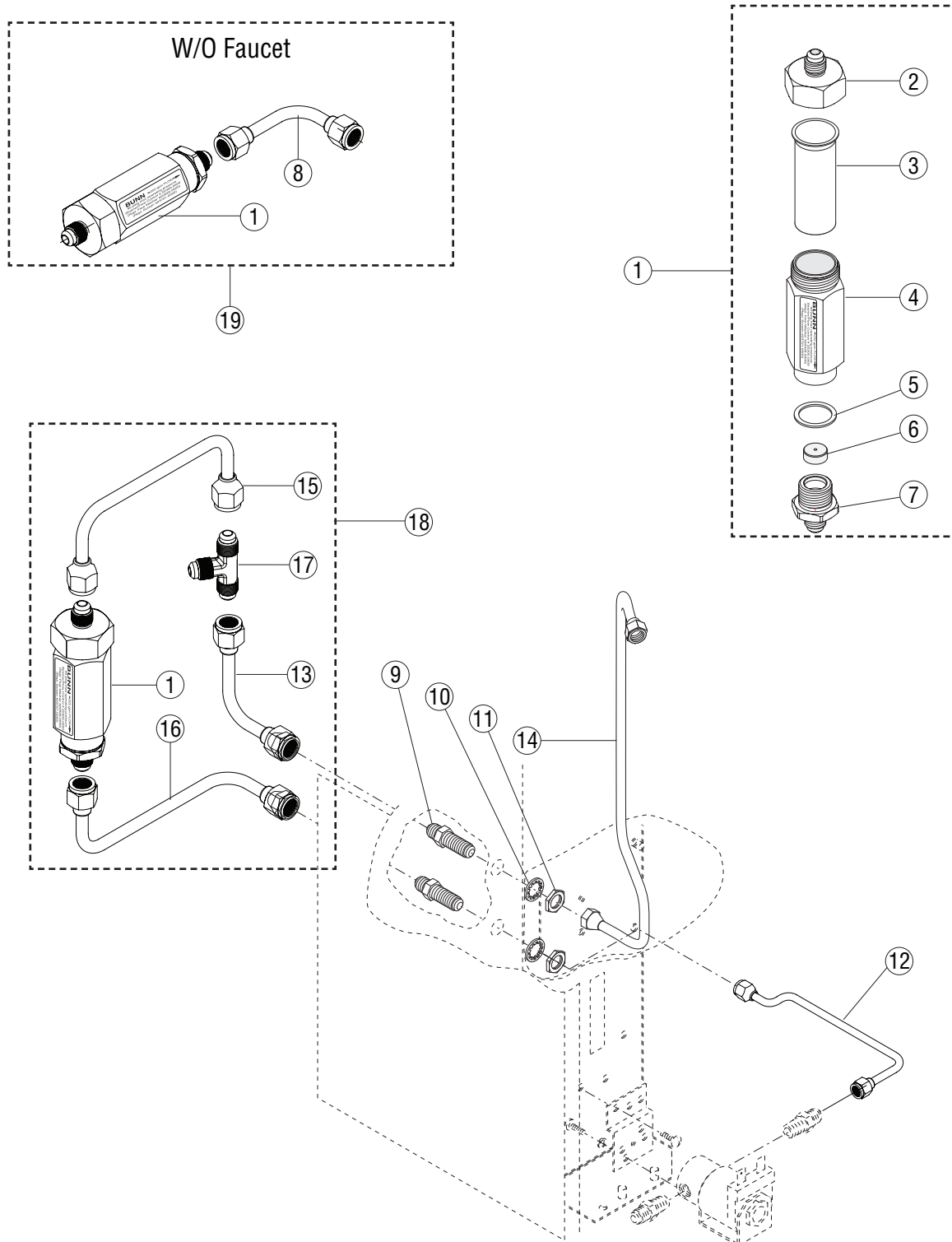
* Indicates the part number listed is for reference only.

W/O Faucet (Optional)



MANIFOLD ASSEMBLIES - LATER SINGLES

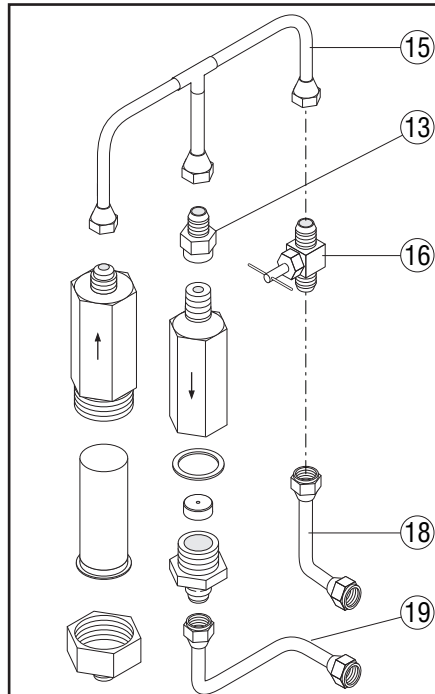
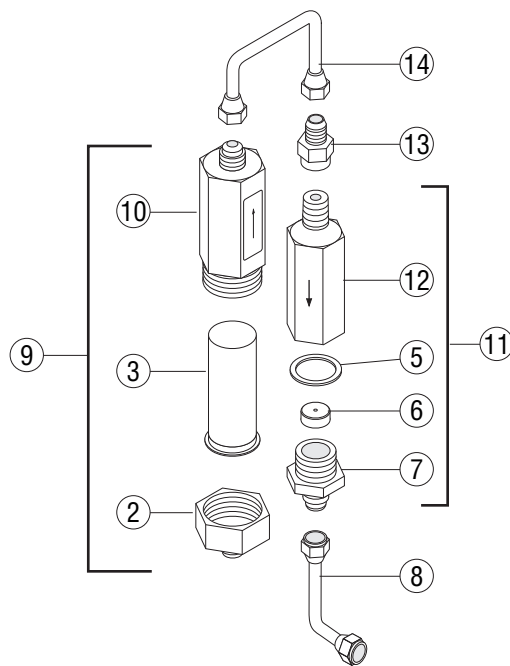
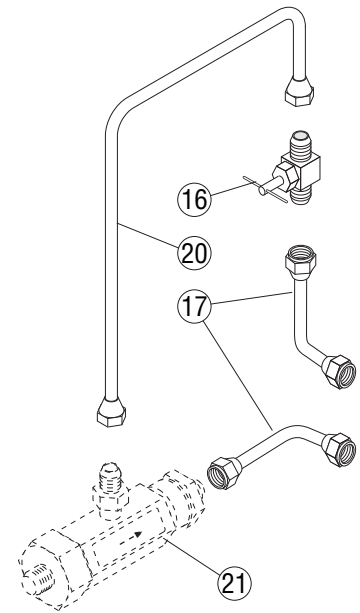
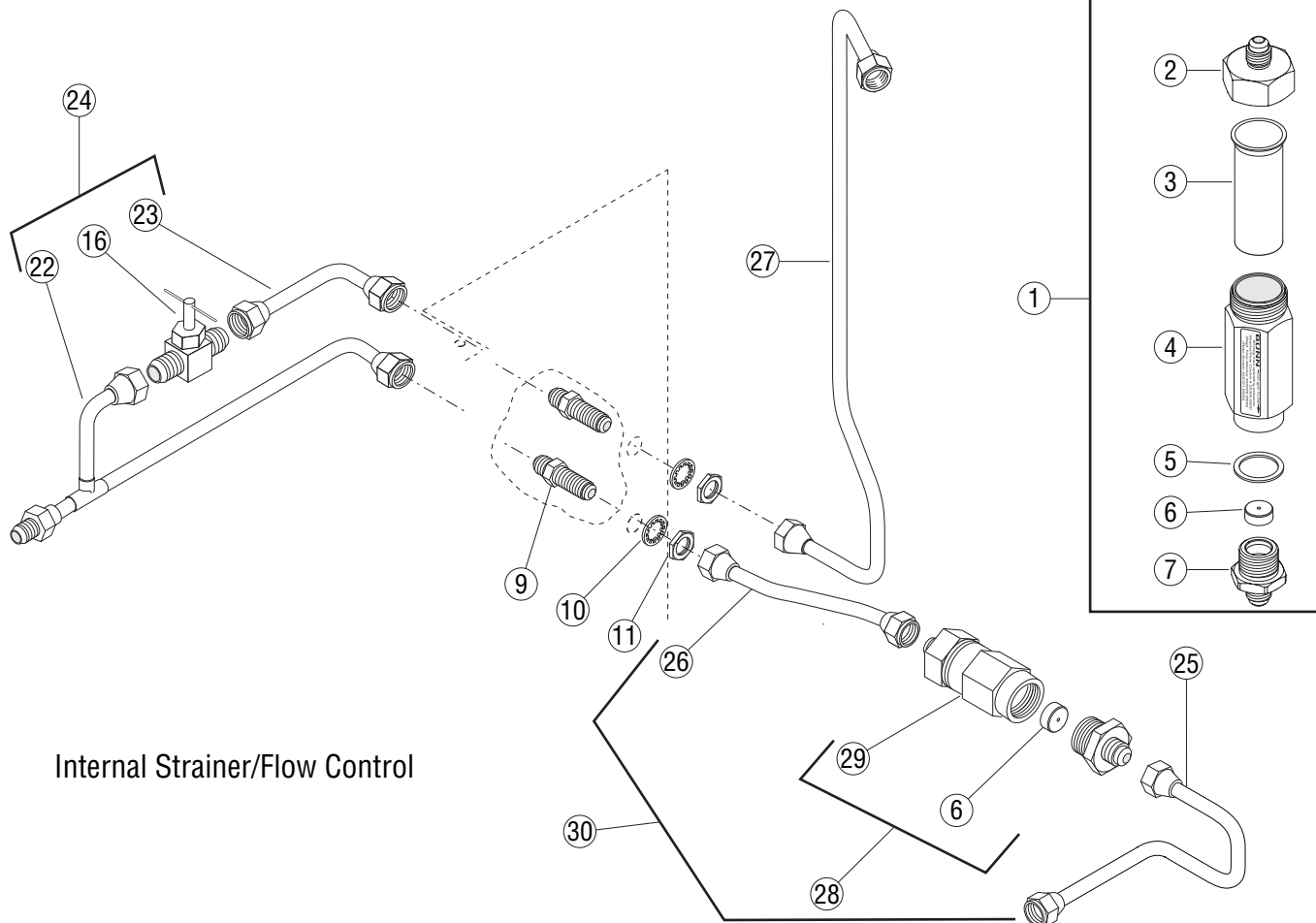
ITEM	PART NO.	QTY. TWIN	QTY. SINGLE	DESCRIPTION
1	00310.0000	-	1	Tube Assy. (Optional)
2	00459.0001	-	2	Fitting, Bulkhead .250" Flare
3	01532.0000	-	2	Lockwasher, Internal Tooth .438" I.D.
4	00463.0000	-	2	Nut, Hex .438"-20
5	41252.0000	-	1	Tube, Bulkhead to Solenoid
6	21814.0016	-	1	Tube
7	20690.0000	-	1	Tube Assy, Bulkhead to Coil
8	20577.0001	-	1	Tee .25" Flare
9	41257.0000	-	1	Tube Assy,
10	41254.0000	-	1	Tube Assy,



STRAINER/FLOW CONTROL - SECOND STYLE SINGLES

ITEM	PART NO.	QTY. TWIN	QTY. SINGLE	DESCRIPTION
1	22300.0222	2	1	Strainer/Flow Control Assy .222 GPM (Includes # 2 - 7)
2	22249.0000	2	1	Cap
3	23721.0000	2	1	Screen
4	22312.0000*	2	1	Housing (Order # 1)
5	01155.0000	2	1	Gasket
6	20526.1222	2	1	Flow Washer/Gasket Set, .222 GPM (Includes # 5)
7	01154.0000	2	1	Fitting, Flow Control Outlet
8	00310.0000	-	1	Tube, Strainer/Flow Control to Bulkhead
9	00459.0000	3	1	Fitting, Bulkhead .250" Flare
10	01532.0000	3	1	Lockwasher, Internal Tooth .438" I.D.
11	00463.0000	3	1	Nut, Hex .438"-20
12	41252.0000	-	1	Tube, Bulkhead to Solenoid
13	21814.0016	1	-	Tube
14	20690.0000	-	1	Tube Assy, Bulkhead to Coil
15	26216.0000	-	1	Tube Assy,
16	26217.0000	-	1	Tube Assy
17	20577.0001	1	-	Tee .25" Flare
18	24394.0222	1	-	Manifold Assy (With Faucet)
19	24356.0222	1	-	Manifold Assy (W/O Faucet)

* Indicates the part number listed is for reference only.

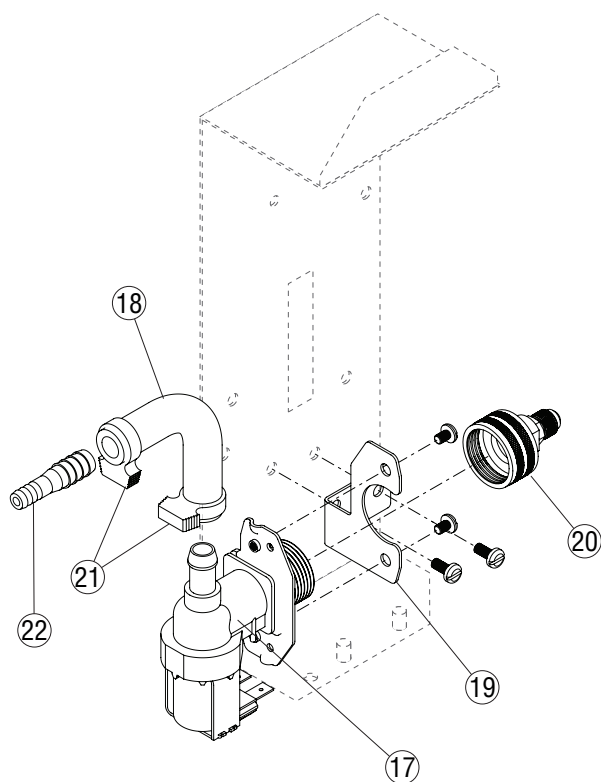
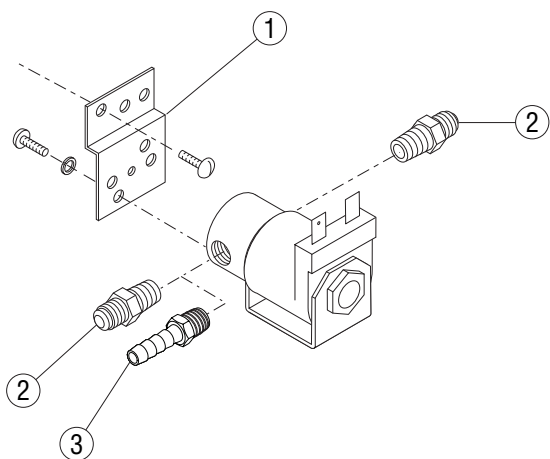
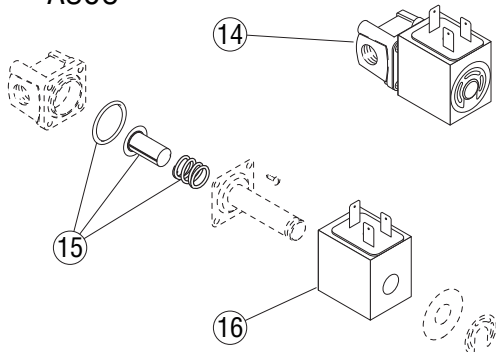
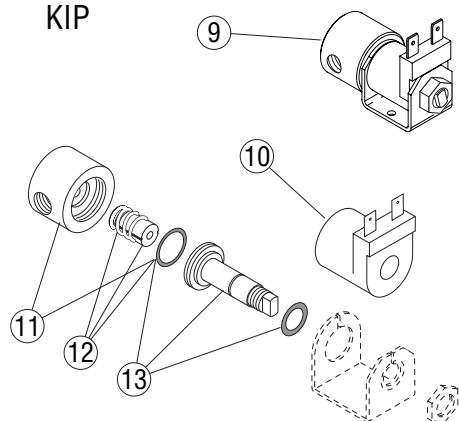
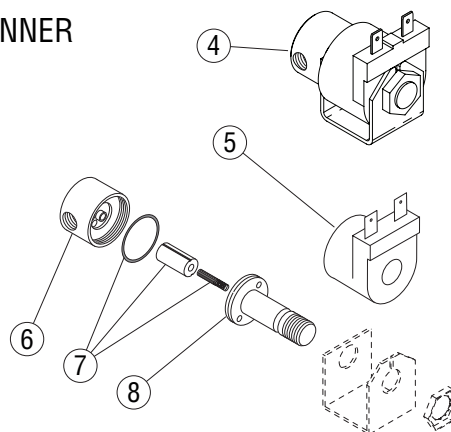
BUNN®**STRAINER/FLOW CONTROL - FIRST STYLE SINGLES****C/CT/CWTF
Series****FIRST TYPE W/FAUCET****FIRST TYPE W/O FAUCET****SECOND TYPE W/FAUCET****Internal Strainer/Flow Control**

P3917

STRAINER/FLOW CONTROL - FIRST STYLE SINGLES

ITEM	PART NO.	QTY. TWIN	QTY. SINGLE	DESCRIPTION
1	22300.0222	2	1	Strainer/Flow Control Assy. .222 GPM (Includes # 2 - 7)
2	22249.0000	2	1	Cap
3	23721.0000	2	1	Screen
4	22312.0000*	2	1	Housing (Order # 1)
5	01155.0000	2	1	Gasket
6	20526.1222	2	1	Flow Washer/Gasket Set, .222 GPM (Includes # 5)
7	01154.0000	2	1	Fitting, Flow Control Outlet
8	00310.0000	-	1	Tube Assy. Strainer/Flow Control to Bulkhead
9	23820.1000	-	1	Strainer Assy. .250" Flare (Includes # 2,3,10)
10	23819.0000*	-	1	Housing (Order # 9)
11	20528.1222	-	1	Flow Control Assy. .222 GPM (Includes # 5,6,7,12)
12	20527.0001*	-	1	Housing (Order # 11)
13	00445.0001	-	1	Connector, .250" Flare x .125" FPT
14	04572.0000	-	1	Tube Assy.
15	12909.0000	-	1	Tube Assy. Manifold
16	00484.0001	-	1	Needle Valve, .25" Flare
17	21812.0002	-	2	Tube Assy.
18	00310.0002	-	1	Tube Assy.
19	12908.0000	-	1	Tube Assy.
20	24393.0000	-	1	Tube Assy.
21	22312.0001*	-	1	Strainer/Flow Control Assy. NOT AVAILABLE (Refer to # 24394.0222)
22	20785.0000	-	1	Tube Assy. Manifold
23	21812.1006	-	1	Tube Assy.
24	20784.0000	-	1	Manifold/ Needle Valve Assy.
25	20786.1000	-	1	Tube Assy.
26	20782.1000	-	1	Tube Assy.
27	20690.0000	-	1	Tube Assy, Bulkhead to Coil
28	01148.0001	-	1	Strainer/Flow Control Assy. .222 GPM
29	01148.0000	-	1	Strainer/Flow Control Assy. .175 GPM
30	20783.0000	-	1	Strainer/Flow Control Assy. .222 GPM (Includes # 25,26,28)

* Indicates the part number listed is for reference only.

**ASCO****ELTEK****KIP****SKINNER**

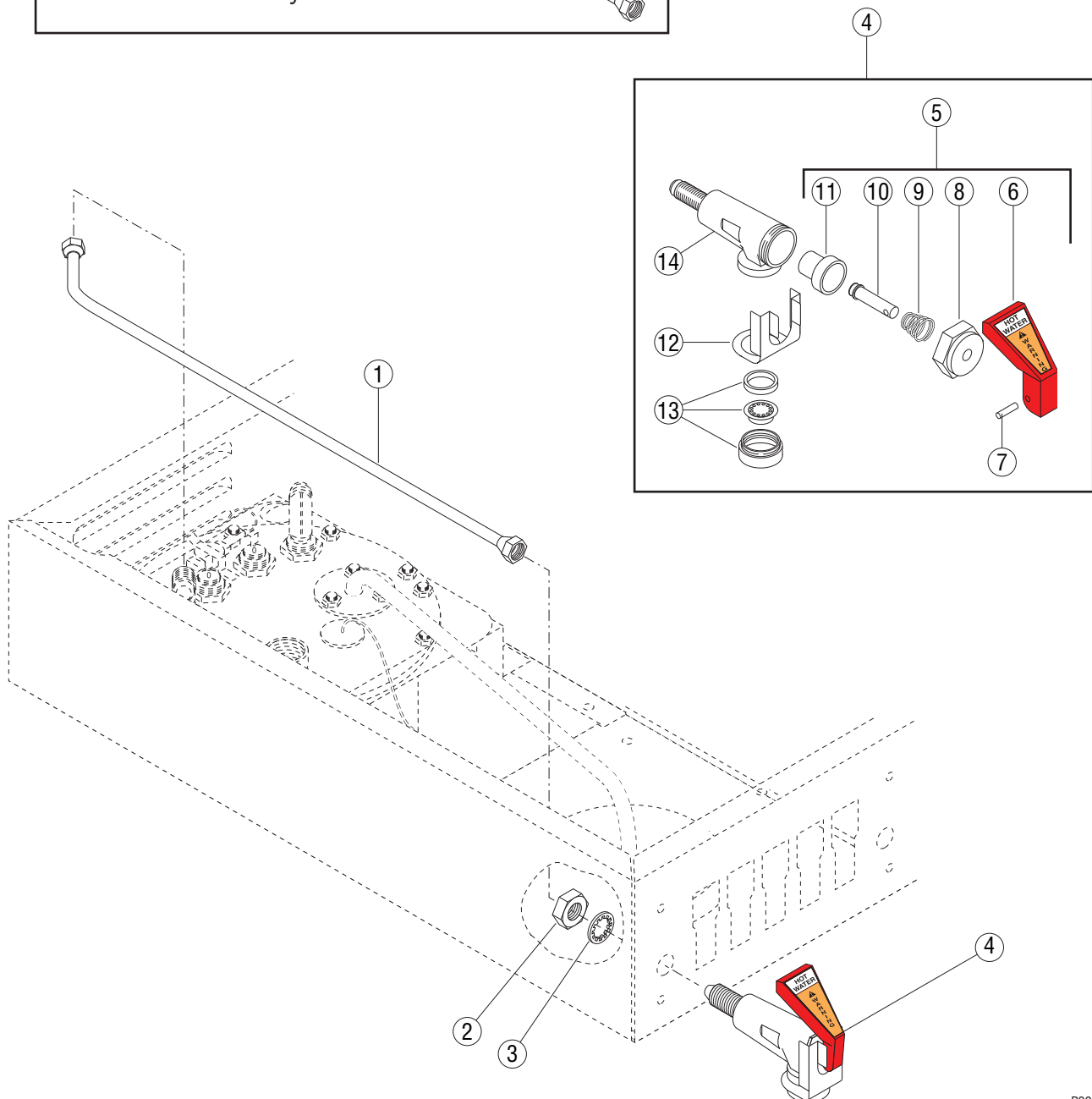
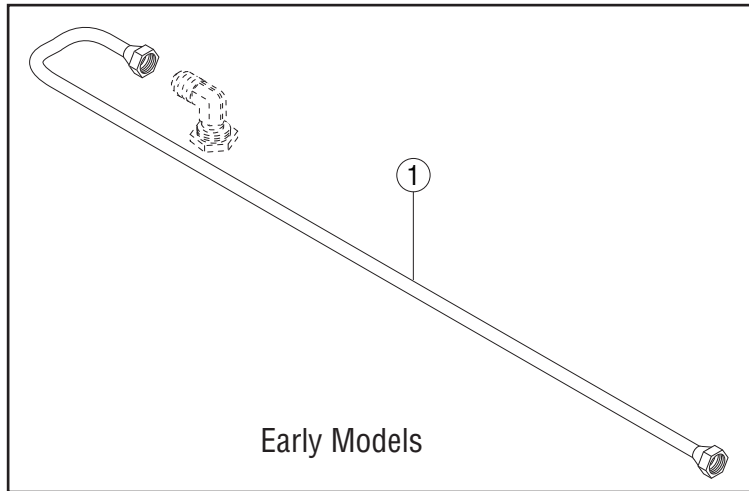
FILL SOLENOIDS

ITEM	PART NO.	QTY. TWIN	QTY. SINGLE	DESCRIPTION
1	07441.0000	2	1	Bracket, Solenoid Mounting
	02308.0000	4	2	Screw, #8-32 X .375" (Bracket - Bracket)
	01327.0000	4	2	Screw, Pan Head #10-32 x .375" (Bracket - Solenoid)
	01502.0000	4	2	Lockwasher, Split #10 (Bracket - Solenoid)
2	00402.0001	2	1	Connector, Male .25" Flare x .125" MPT (2 Used On Early Models)
3	22397.0001	2	1	Fitting, .25" Barb x .125" MPT (Current Models)
4	01085.0000	2	1	Solenoid Valve, 120V - 1.48" Dia Coil
	01975.0000	2	1	Solenoid Valve, 240V - 1.48" Dia Coil
	21180.0000	2	1	Solenoid Valve, 200V - 1.48" Dia Coil
5	01100.0000	2	1	Coil - 240V
	01101.0000	2	1	Coil - 120V
	21181.0000	2	1	Coil - 200V
6	01079.0000	2	1	Base
7	01111.0000	2	1	Repair Kit
8	01116.0000	-	1	Guide
9	01085.0002	2	1	Solenoid Valve, 120V - 1.0" Dia Coil
10	28480.0000	2	1	Coil - 120V
11	28479.0000	1	1	Solenoid Valve Base Kit - 1" Dia Coil (Includes O-ring)
12	01111.0002	1	1	Repair Kit - 1" Dia Coil (Includes Plunger, Spring and O-ring)
13	28481.0000	1	1	Guide Kit - 1" Dia Coil (Includes Washer & O-ring)
14	28005.0000	2	1	Solenoid Valve, 240V
15	28021.0000	2	1	Repair Kit
16	28020.0000	2	1	Coil - 240V
17	42025.0000	2	1	Kit, Universal Replacement Solenoid, 120V
	42025.0001	2	1	Kit, Universal Replacement Solenoid, 230V
	41255.0002	-	1	Solenoid Valve 200V
	41255.0003	-	1	Solenoid Valve 100V
	32283.0000	4	2	Screw, Sst Sltd Pnh M4 X 6MM
	41935.0000	2	1	Kit, Solenoid Retrofit, 120V (Includes 17 - 22)
	41935.0001	2	1	Kit, Solenoid Retrofit, 230V (Includes 17 - 22)
18	20976.0006*	2	1	Tube, Silicone .38ID x .62OD x 4.50 (Order # 23)
19	41256.0000	2	1	Bracket
	02308.0000	4	2	Screw, #8-32 X .375" (Bracket - Bracket)
20	37297.0002	2	1	Fitting, 1/4" Flare X 3/4" Fthrd
21	12422.0001	4	2	Clamp, SNP - 10
22	26443.0000	2	1	Reducer, Nyl Hose Barb .38X.25

The Following Items Are Not Illustrated

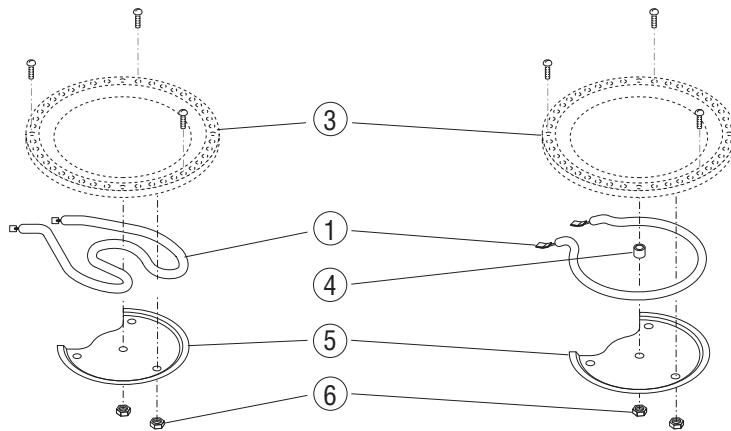
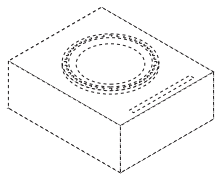
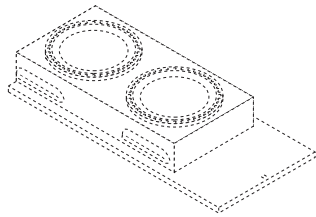
23	20976.1000	-	-	Tube, .375" ID x 12" (Use as required)
	20976.1001	-	-	Tube, .375" ID x 36" (Use as required)
	20976.1002	-	-	Tube, .375" ID x 120" (Use as required)

* Indicates the part number listed is for reference only.



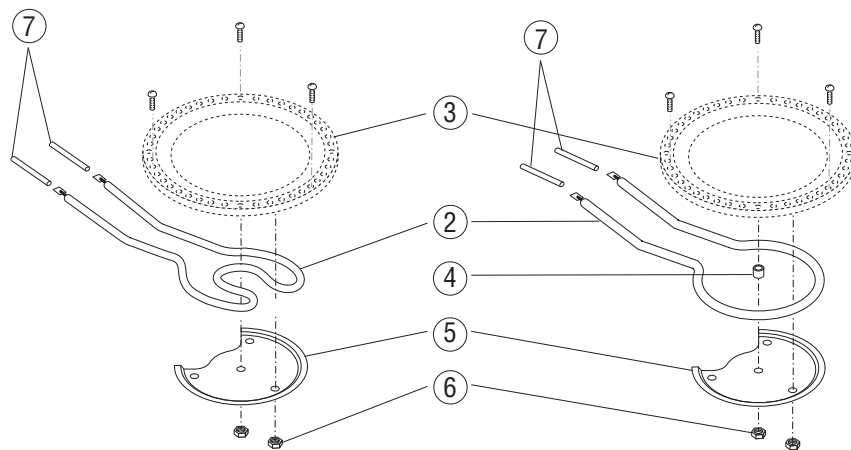
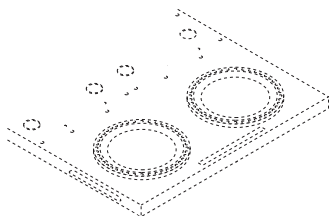
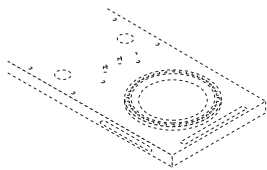
FAUCET AND TUBING

ITEM	PART NO.	QTY. TWIN	QTY. SINGLE	DESCRIPTION
1	20691.0001	1	1	Tube Assembly, Coil to Faucet (Early Models)
	20691.0000	1	1	Tube Assembly, Coil to Faucet (Late Models)
2	13059.0000	1	1	Faucet Jam Nut
3	01532.0000	1	1	Lockwasher, Internal Tooth .438" I.D.
4	12915.0000	1	1	Faucet, Hot Water (Includes items 5 thru 14)
5	13061.0000	1	1	Faucet Handle/Stem Assembly (Includes items 6 thru 11)
6	13053.0000	1	1	Faucet Handle Kit (Includes item 7)
7	02858.0000	1	1	Pin, Spring .125" Dia x .50"
8	13060.0000	1	1	Faucet Bonnet Nut
9	13055.0000	1	1	Faucet Spring
10	13054.0000	1	1	Faucet Stem
11	13056.0000	1	1	Faucet Seat Cup
12	13057.0000	1	1	Faucet Safety Clip
13	13058.0000	1	1	Faucet Aerator Kit
14	35129.0000	1	1	Body, Faucet (Not available. Order item 4)

UPPER & SIDE HOUSING WARMERS**(A)**

'A" & "B" MODELS ONLY

120V & 120/240V MODELS ONLY

BASE WARMERS**(B)**

'A" & "B" MODELS ONLY

120V & 120/240V MODELS ONLY

WARMER ASSEMBLIES

ITEM	PART NO.	QTY. TWIN	QTY. SINGLE	DESCRIPTION
A	03652.0000	1		Warmer Assembly 120V, Top & Side Warmers (Includes items 1, & 3 - 6)
	11440.0009	1		Warmer Assembly 220V, Top & Side Warmers (Includes items 1, 3, 5, & 6)
	11440.0011	1		Warmer Assembly 200V, Top & Side Warmers (Includes items 1, 3, 5, & 6)
	01303.0000	3		Screw, Pan Head - SST #4-40 x .5"
	00916.0000	3		Fastener, J-Type #4-40
	1			
	01227.0000	1		Warmer Element 120V Top & Side Warmers
	01951.0000	1		Warmer Element 220V Top & Side Warmers ("A" Models)
	01951.0001	1		Warmer Element 200V Top & Side Warmers ("B" Models)
B	11440.0005	1		Warmer Assembly 120V, Base Warmers (Includes items 2-7) (Single CW)
	11440.0008	1		Warmer Assembly 220V, Base Warmers (Includes items 2, 3, 5, & 6)
	11440.0010	1		Warmer Assembly 200V, Base Warmers (Includes items 2, 3, 5, & 6)
	01303.0000	3		Screw, Pan Head - SST #4-40 x .5"
	00916.0000	3		Fastener, J-Type #4-40
	2			
	11442.0000	1		Warmer Element 120V Base Warmers (Single CW)
	11438.0000	1		Warmer Element 220V Base Warmers ("A" Models)
	11438.0001	1		Warmer Element 200V Base Warmers ("B" Models)
3	03656.0000	1		Warmer Dish, Blk 45 Hole
4	13042.0001	1		Spacer, (120V Models Only)
5	05212.0000	1		Plate, Element Retaining
6	00970.0000	2		Nut, Keps #8-32
7	04828.0001*	2		Tube, Silicone .25" Dia x 1.875" LG. (Order Item 8)

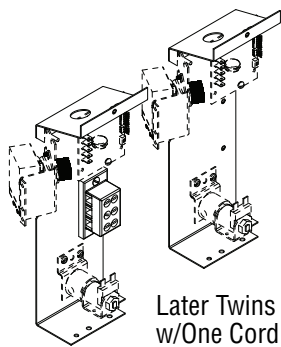
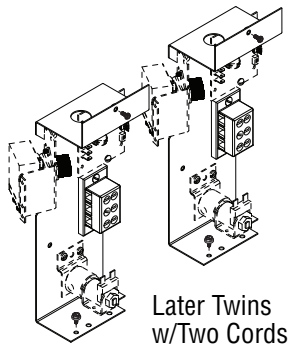
The Following Items Are Not Illustrated

8	04828.1001	-		Tube, Silicone .25" Dia. x 24" LG (Use as required)
9	24785.0002	1		Galley Kit, "C" Series, 3 Warmers
10	21016.0011	1		Ground Wire, 15.0" LG.- Lower Warmer to Ground Screw
11	21016.0012	1		Ground Wire, 10.0" LG.- Upper Warmer to Upper Warmer
12	21016.0027	1		Ground Wire, 26.0" LG.- Lower Warmer to Ground Screw

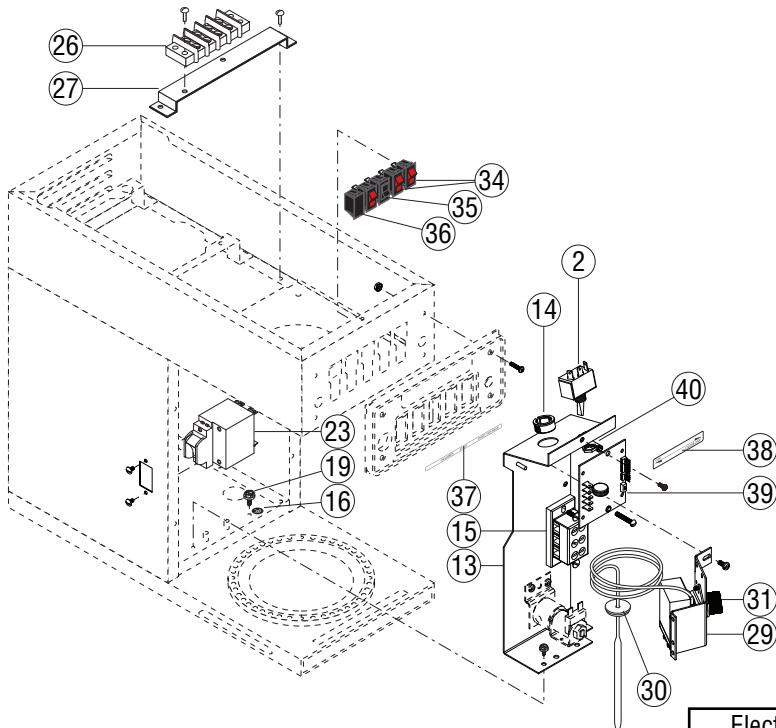
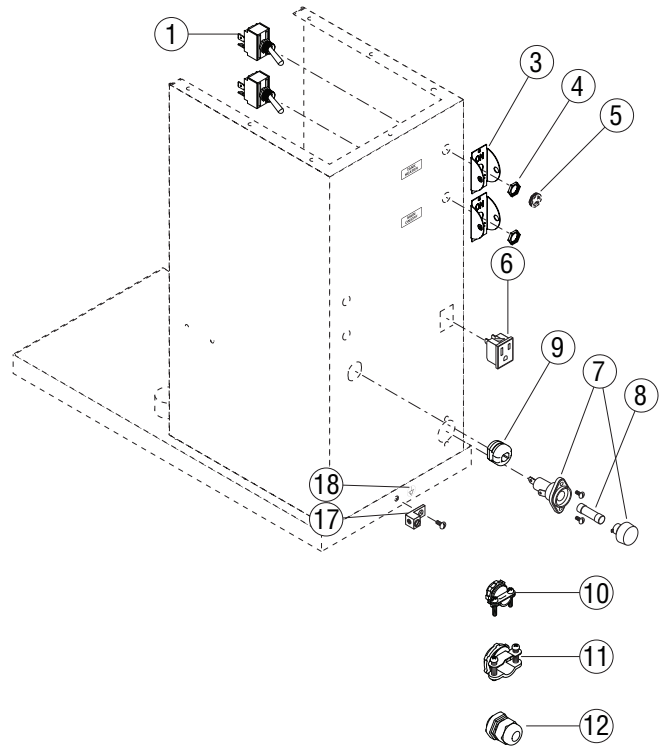
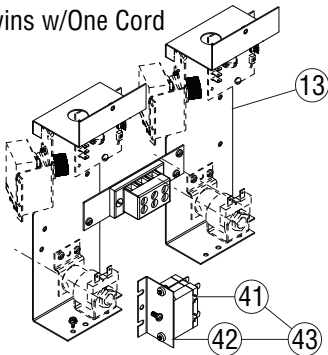
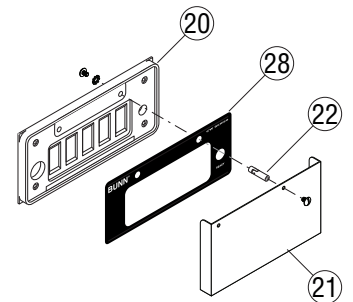
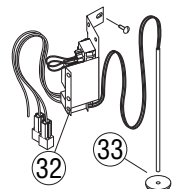
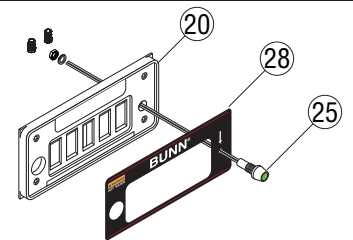
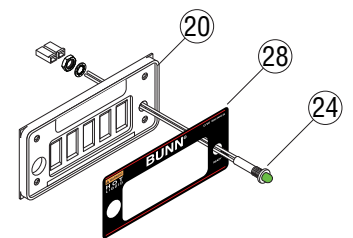


All warmers listed above are rated @ 100 watts

* Indicates the part number listed is for reference only.

BUNN®**ELECTRICAL AND OPERATING CONTROLS****C/CT/CWTF
Series**

Early Twins w/One Cord

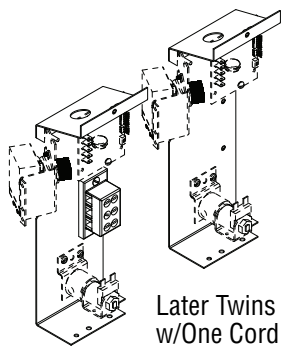
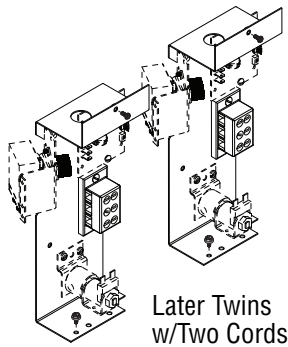
**Electronic
Thermostat****Brewers w/Switch Cover****Brewers w/Fresh Timer****Brewers w/Ready Light**

ELECTRICAL AND OPERATING CONTROLS

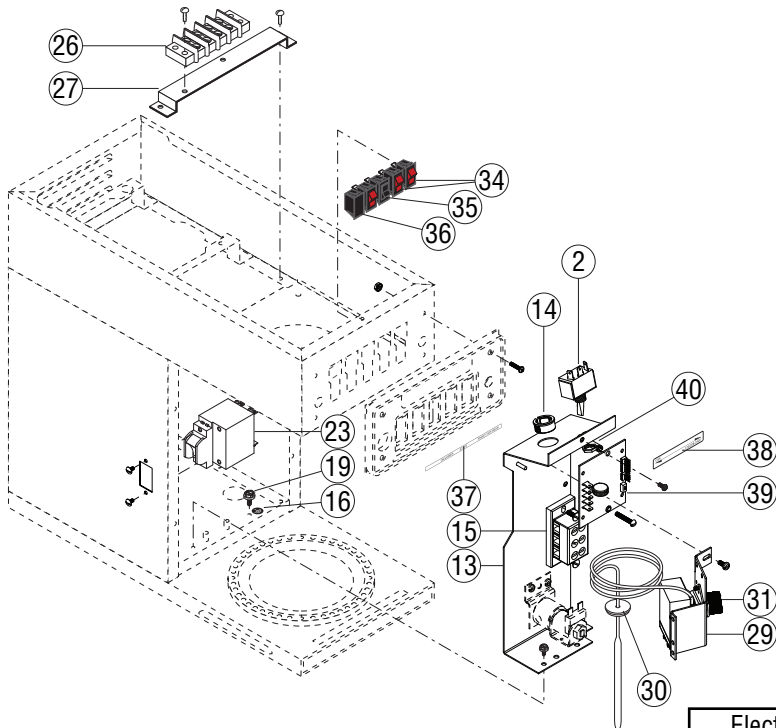
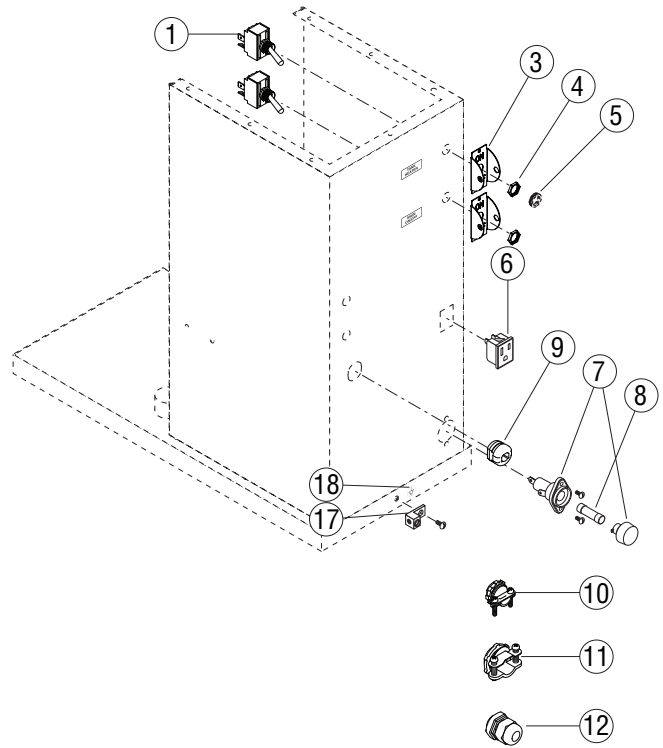
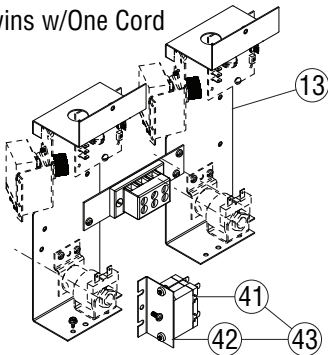
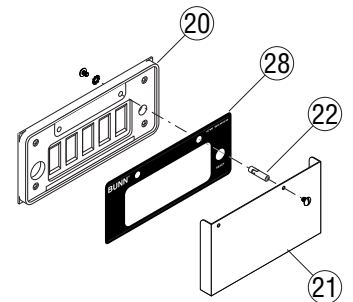
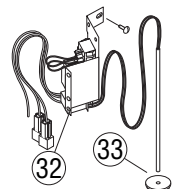
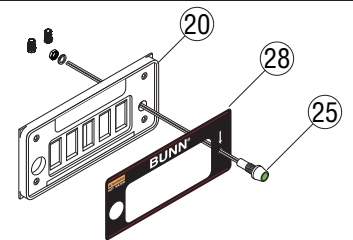
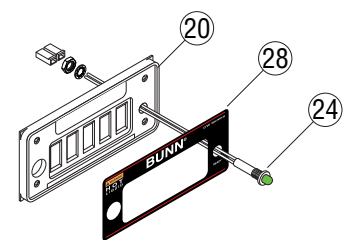
ITEM	PART NO.	QTY. TWIN	QTY. SINGLE	DESCRIPTION
1	28004.0000	-	2	Toggle Switch, (DPST) (Includes Hex Nut) (A Models)
	40763.0001	-	2	Toggle Switch, (DPST) (Includes Hex Nut) (4 Used on 0/6 Twin w/2 Cords)
2	23522.0001	-	1	Toggle Switch, (Dual Volt, SPDT) (Includes Hex Nut)
3	25102.0000	-	1	Bracket, Switch Guard (ON/OFF)
	25102.0001	-	1	Bracket, Switch Guard (I/O)
4	23696.0000	2	1	Hex Nut (2 Used on DV)
5	23697.0000	2	1	Plastic Face Nut
6	03628.0000	-	1	Receptacle, Grounded
7	28176.0000	-	1	Fuse Holder
	02308.0000	-	2	Screw, Pan Head #8-32 x .375"
8	22012.0002	-	1	Fuse, 20 amp
9	01686.0000	-	1	Bushing, Strain Relief (15A Models only)
10	01685.0000	-	1	Bushing, Strain Relief (20/35 & MV/DV Models)
11	01590.0000	1	-	Bushing, Strain Relief (2 Used on 2 Cord TWIN's)
12	05746.0000	1	1	Bushing, Strain Relief (A Models)
13	12698.0005	2	1	Bracket, Component Mounting (All Models Except 2 Cord Twins)
	12698.0004	2	-	Bracket, Component Mounting (2 Cord Twins Only)
	12698.0003	-	-	Bracket, Component Mounting (Single CW Only)
	02308.0000	2	1	Screw, Pan Head #8-32 x .375"
	02332.0001	2	1	Screw, Hex CrimpTite #6-32 x .25"
14	00606.0000	2	1	Bushing .875 Dia.
15	01106.0000	-	1	Terminal Block, 2-pole 120V (Black-White)
	01106.0001	-	1	Terminal Block, 2-pole 240V (Black-Red)
	01106.0003	-	1	Terminal Block, 2-pole 230V (Brown-Blue) (CE)
	07038.0000	3	1	Terminal Block, 3-pole 120/240V (Black-White-Red)
	01317.0000	4	2	Screw #8-32 x .5"
16	00824.0000	1	1	Decal, Ground (One Additional w/Two Cords)
17	27705.0000	-	1	Terminal Lug (CE)
	01327.0000	-	1	Screw, PNH 10-32 x .375"
18	00824.0001	1	1	Decal, Equipotentiality (CE Only)
19	02337.0001	2	1	Ground Screw, Hex Head #10 x .375" (Self Tap)
	01309.0000	2	1	Ground Screw, Pan Head #10-32 x .5" (Square Washer)
20	13352.0008	2	1	Control Panel
	13352.0011	2	1	Control Panel (w/Switch Cover)
	02301.0000	8	4	Screw, Phillips Pan Head #6-32 x .625"
	00973.0000	8	4	Nut, KEPS #6-32
21	27429.0000	2	1	Switch Cover (Brass)
	27429.0002	2	1	Switch Cover (SST)
	01308.0000	4	2	Screw, SST Truss Head #6-32 x .25" (Brass Screw No Longer Available)
22	12148.0000	2	1	Spacer, Hinged
	01308.0000	4	2	Screw, SST Truss Head #6-32 x .25"
	01510.0000	4	2	Lockwasher, #6 External Tooth
23	38894.0001	1	1	Switch, On/Off (One Additional w/ Two Power Cord Twins)
	01308.0002	2	2	Screw, TRH #6-32 x .25"

Continued on next page

* Indicates the part number listed is for reference only.

BUNN®**ELECTRICAL AND OPERATING CONTROLS****C/CT/CWTF
Series**

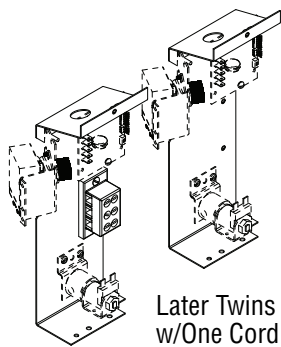
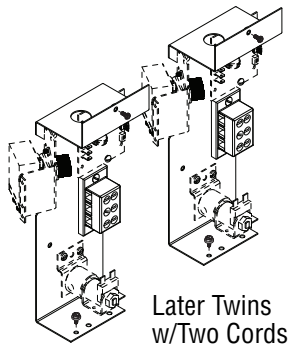
Early Twins w/One Cord

**Electronic
Thermostat****Brewers w/Switch Cover****Brewers w/Fresh Timer****Brewers w/Ready Light**

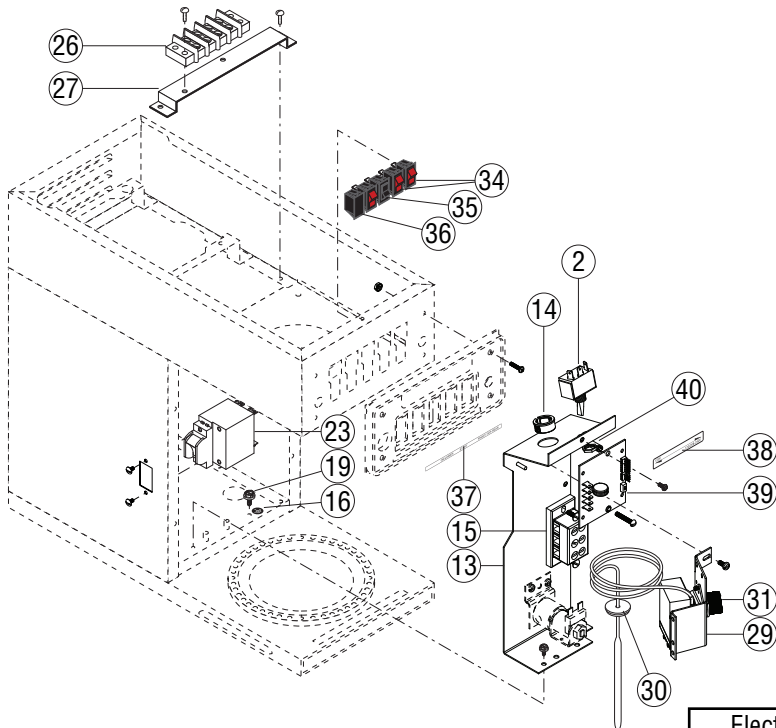
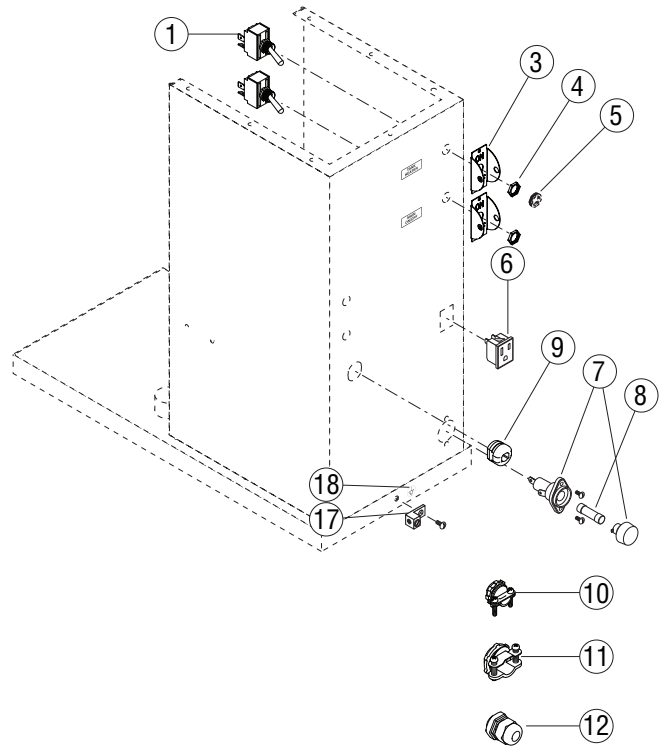
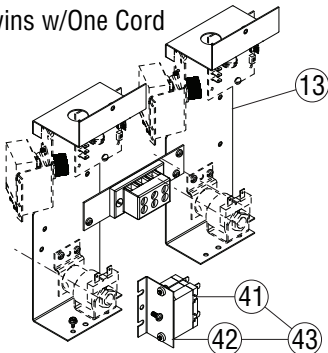
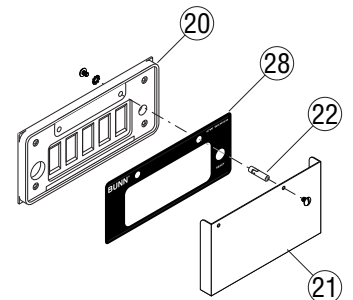
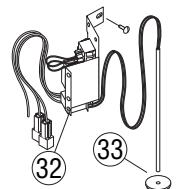
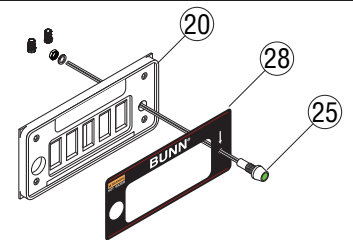
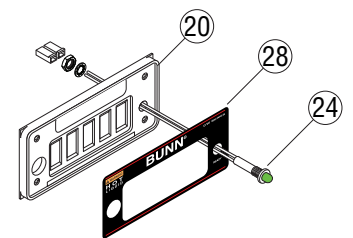
ELECTRICAL AND OPERATING CONTROLS

ITEM	PART NO.	QTY. TWIN	QTY. SINGLE	DESCRIPTION
24	12984.0002	-	1	Ready Light, 120V Green Neon (Includes Hardware as Shown)
	12984.0004	2	1	Ready Light, 240V Green Neon (Includes Hardware as Shown)
	04243.0000	4	2	Terminal Housing, Plastic
25	12517.0003	2	1	LED, Fresh Timer (Includes Hardware as Shown)
	25292.0000	2	1	Lock Washer, M6
	34130.0000	2	1	Nut, M6
	03851.0000	4	2	Wire Nut
26	28177.0000	-	1	Terminal Block
	01317.0004	-	2	Screw, Truss Head #8-32 x .625"
27	28179.0000	-	1	Bracket, Term. Block Mounting
28	22289.0000	2	1	Decal, Control Panel (No Faucet, No Light)
	22289.0001	1	1	Decal, Control Panel (No Faucet, w/Ready Light)
	22289.0002	-	1	Decal, Control Panel (w/Faucet, No Light)
	22289.0003	1	1	Decal, Control Panel (w/Faucet, w/Ready Light)
	22289.0005	1	-	Decal, Control Panel (No Faucet, w/Fresh LED)
	22289.0006	1	1	Decal, Control Panel (w/Faucet, w/Fresh LED)
	22289.0012	1	-	Decal, Control Panel (No Faucet, w/Ready Light & Switch Cover)
	22289.0013	1	1	Decal, Control Panel (w/Faucet, w/Ready Light & Switch Cover)
29	04314.0001	2	1	Mechanical Thermostat Kit, w/Leads (Includes Knob & Grommet)
	28319.0000	2	1	Mechanical Thermostat Kit, w/o Leads (Includes Knob & Grommet)
	02308.0000	2	1	Screw, Pan Head #8-32 x .375"
	20762.0000	4	2	Terminal Screws, Brass #8-32 x .25"
30	07073.1000	2	1	Grommet, Mechanical Thermostat (Includes 1ea, early/new style)
31	00720.0000	2	1	Knob
32	26527.1000	2	1	Electronic Thermostat Kit, 120V (Includes Grommet)
33	12570.0000	2	1	Grommet, Electronic Thermostat
34	12920.0000	#	#	Warmer Switch, 120V
	12920.0002	#	#	Warmer Switch, 240V
	27727.0000	#	#	Warmer Switch, 230V (A Models)
	20637.0000	-	1	½ Batch Switch (Single CW Only)
35	01063.0000	2	1	Start Switch, Momentary
	27904.0000	2	1	Start Switch, Momentary (A Models)
36	12921.0000	#	#	Switch Blank
	27691.0001	-	1	Ready Light (A Models Only)
37	22295.0000	-	1	Decal, Pour In (No Warmers)
	22295.0001	-	1	Decal, Pour In (One Top Warmer)
	22295.0002	-	1	Decal, Pour In (Three Lower Warmers)
	22295.0003	-	1	Decal, Pour In (One Top, Three Lower Warmers)
	22295.0004	2	1	Decal, Automatic (One Lower Warmer)
	22295.0005	2	1	Decal, Automatic (One Lower, One Top Warmer)
	22295.0006	2	1	Decal, Automatic (Three Lower Warmers)
	22295.0007	-	1	Decal, Automatic (One Top, Three Lower Warmers)
	22295.0010	2	1	Decal, Automatic (One Lower, Two Top Warmers)
	22295.0011	2	1	Decal, Automatic (No Warmers) APS, TC, TS
	22295.0012	-	1	Decal, Pour In (One Lower, Two Top Warmers)
	28010.0000	-	1	Decal, Automatic (One Lower Warmer) (CE Only)
	28010.0001	-	1	Decal, Automatic (One Lower, One Top Warmer) (CE Only)
	28010.0002	-	1	Decal, Automatic (Three Lower Warmers) (CE Only)
	28010.0003	-	1	Decal, Automatic (One Lower, Two Top Warmers) (CE Only)
	28010.0004	-	1	Decal, Automatic (No Warmers) APS, TC (CE Only)
	28010.0005	-	1	Decal, Pour In (No Warmers) (CE Only)
	20603.0001	-	1	Decal, Switches 1 Gal. - ½ Batch (Single CW Only)

* Indicates the part number listed is for reference only.

BUNN®**ELECTRICAL AND OPERATING CONTROLS****C/CT/CWTF
Series**

Early Twins w/One Cord

**Electronic
Thermostat****Brewers w/Switch Cover****Brewers w/Fresh Timer****Brewers w/Ready Light**

ELECTRICAL AND OPERATING CONTROLS

ITEM	PART NO.	QTY. TWIN	QTY. SINGLE	DESCRIPTION
38	34056.0000	-	1	Decal, Dual Volt
39	32400.0000	2	1	Digital Timer Kit, 120V
	32400.0001	2	1	Digital Timer Kit, 240V
	01320.0000	2	1	Screw, Round Head #8-32 x 1.0" (Late Models)
40	32530.0001	2	1	Spacer
41	37711.0000	2	1	Relay, 120V
	37711.0001	2	1	Relay, 240V
	02308.0000	4	2	Screw, Pan Head #8-32 x .375"
42	36256.0000	2	1	Bracket
	02308.0000	2	1	Screw, Pan Head #8-32 x .375"
43	38326.0000	2	1	Kit, Recovery Booster Relay w/Hardware 120V
	38326.0001	2	1	Kit, Recovery Booster Relay w/Hardware 240V

The Following Items Are Not Illustrated

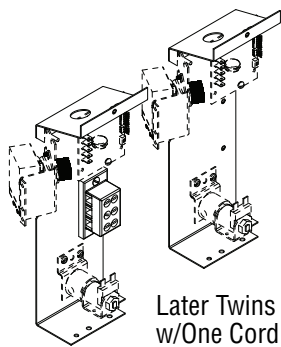
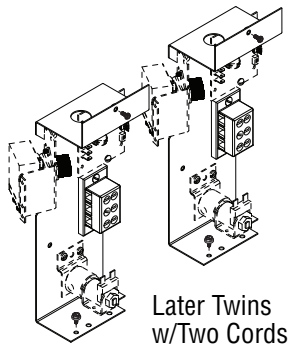
44	01719.1000	-	1	Power Cord, 120V 15A (Model 15 Only)
	23799.0001	-	1	Power Cord, 120V 20A (Model 20 Only)
	28111.0007	-	1	Power Cord, 230V 13A Plug (UK) CWA-APS
	27728.0011	-	1	Power Cord, 230V 16A (CE Only) CWTF35A No Plug
	32832.0000	1	-	Power Cord, 230V (CE Only) CWTFA Twin-APS No Plug
	33529.0002	-	1	Power Cord, 230V 10A Euro Plug (CE Only) CWA/CWTFA-APS

Models without Master ON/OFF Switch

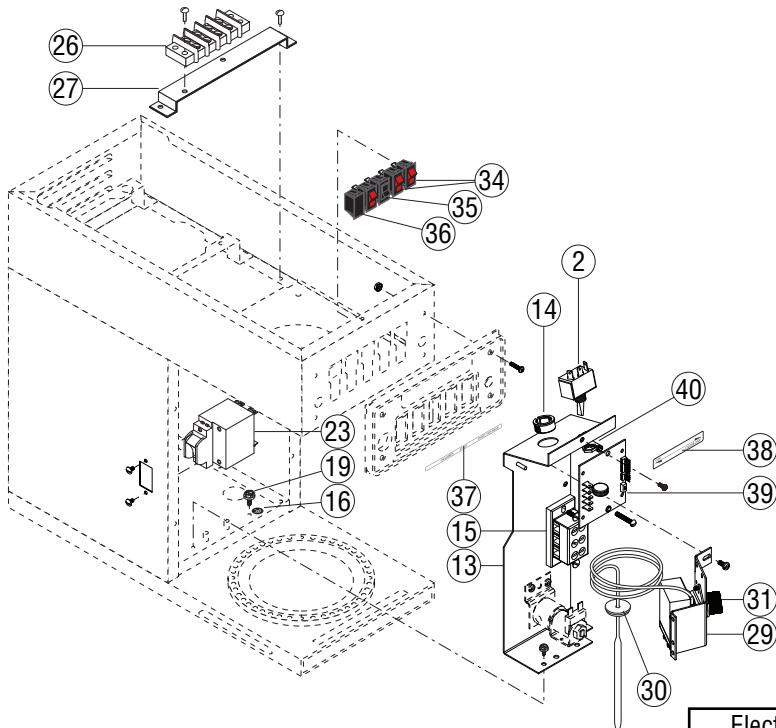
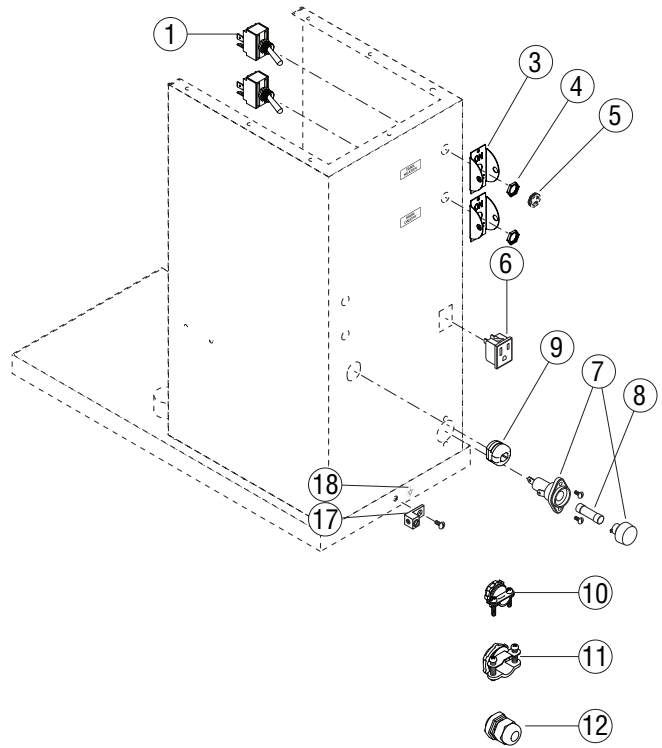
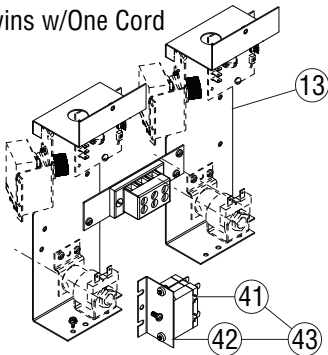
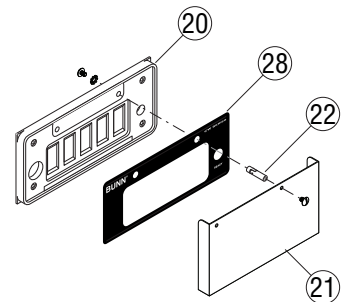
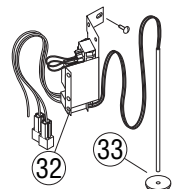
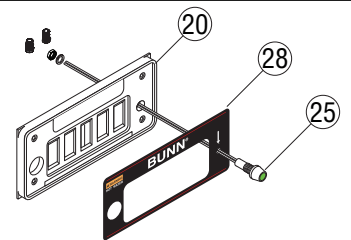
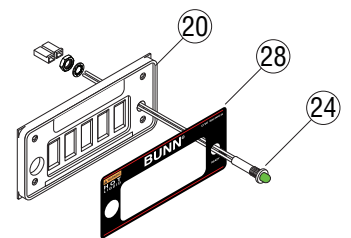
45	12985.0000	2	1	Wiring Harness, Thermostat to Ready Light (CWTF & Single CW)
	12985.0003	2	1	Wiring Harness, Thermostat to Ready Light (A Models)
46	25347.0000	2	1	Wiring Harness, Thermostat to Tank
47	29445.1000	2	1	Wiring Harness, Digital Timer Adaptor (Early Models)
48	27018.0000	2	1	Wiring Harness, Thermostat to Relay
	25907.0000	2	1	Lead Assembly, Black (Relay to Solenoid)
	25907.0001	2	1	Lead Assembly, White (Relay to Solenoid)
49	21002.9000	-	1	Lead Assembly, Blue (T. Stat. to Upper Term. Block) MV Models
50	28175.0000	-	1	Wiring Harness, (T. Stat. to Upper Term. Block) MV Models
51	24204.0000	1	-	Wiring Harness, Left Side Warmer to Main Harness (Early 0/6 Twin)
	24204.0000	1	-	Wiring Harness, Right Side Warmer to Main Harness (Early 0/6 Twin)
52	25326.0000	-	1	Wiring Harness, One Top Warmer to Main Harness 120V
	25326.0001	-	1	Wiring Harness, One Top Warmer to Main Harness 240V
53	23331.0002	-	1	Wiring Harness, Main APS/TC/TSR 240V & CE
54	23953.0000	1	-	Wiring Harness, Main 0/6 Twin 120/240V
55	23989.0000	1	-	Wiring Harness, Main 4/2, 2/2, 0/2 Twin-APS 120/240V
	23989.0001	1	-	Wiring Harness, Main 4/2 - 2/2 Twin 200V
56	23990.0000	1	-	Wiring Harness, Main 4/2, 2/2, Twin 230V (3 Phase)
	23990.0001	1	-	Wiring Harness, Main 2/2 Twin 240V & CE
57	25328.0001	-	1	Wiring Harness, Main (3 Warmers) 240V
58	25329.0000	2	1	Wiring Harness, Main (3 Warmers) & 0/6 Twin 120/240V
	25329.0002	-	1	Wiring Harness, Main APS/TC 120/240V

Continued on next page

* Indicates the part number listed is for reference only.

BUNN®**ELECTRICAL AND OPERATING CONTROLS****C/CT/CWTF
Series**

Early Twins w/One Cord

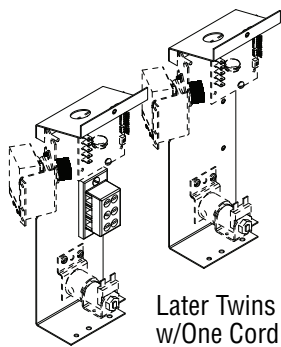
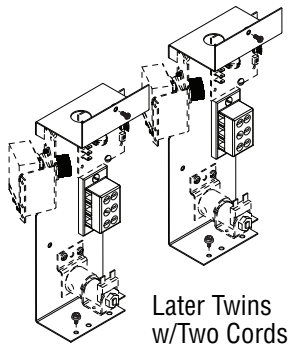
**Electronic
Thermostat****Brewers w/Switch Cover****Brewers w/Fresh Timer****Brewers w/Ready Light**

ELECTRICAL AND OPERATING CONTROLS

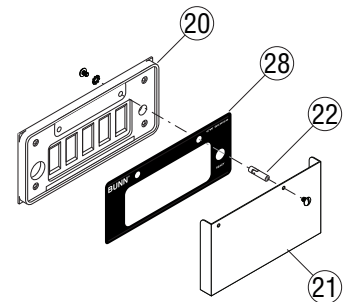
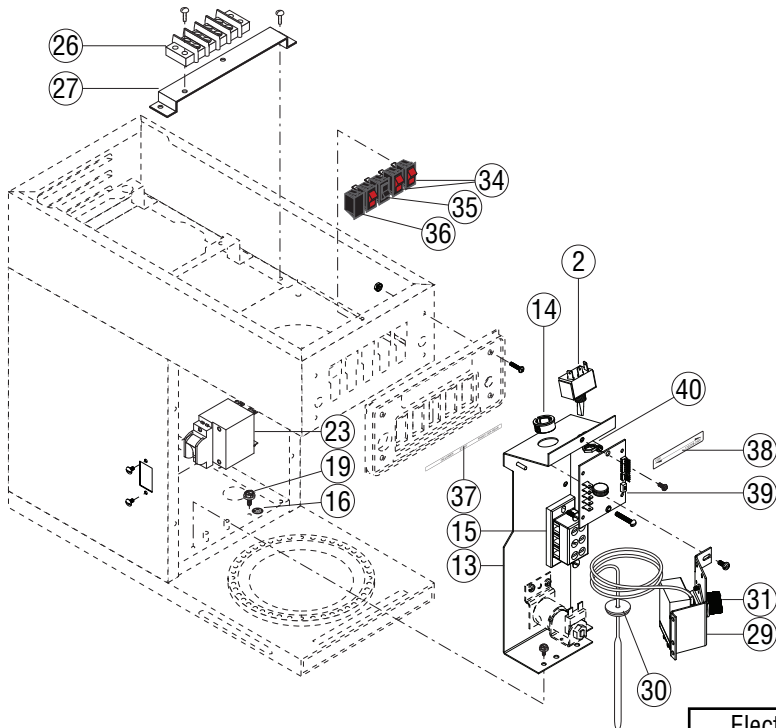
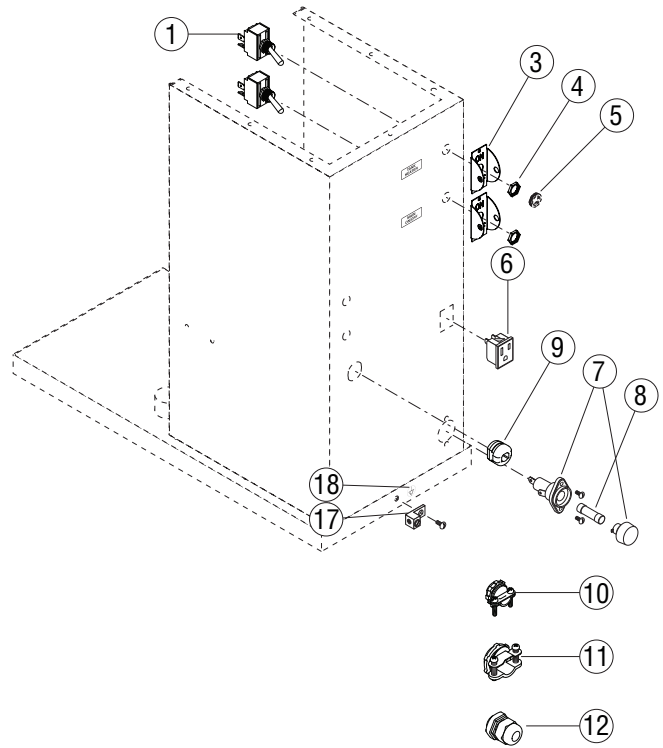
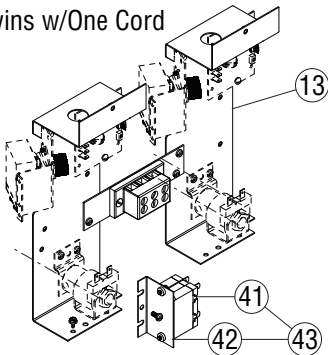
ITEM	PART NO.	QTY. TWIN	QTY. SINGLE	DESCRIPTION
59	27946.0000	-	1	Wiring Harness, Main (2 Warmers) 240V
60	28051.0000	-	1	Wiring Harness, Main APS/TC 240V & CE
61	33985.0000	-	1	Wiring Harness, Main (3 Warmers) 120V & Single CW-15
62	34005.0000	-	1	Wiring Harness, Main APS/TC (Pour In Only) 120V
63	34023.0000	-	1	Wiring Harness, Main (Single CW-15) 120/240V
	34023.0002	-	1	Wiring Harness, Main (4 Warmers) 120/240V
64	34023.0008	1	-	Wiring Harness, Main Twin-APS (CE) 230V
65	34026.0002	-	1	Wiring Harness, Main APS-DV
	34026.0003	-	1	Wiring Harness, Main APS 120/240V
66	34111.0000	-	1	Wiring Harness, Main (MV Models)
67	34981.0001	-	1	Wiring Harness, Main APS/TC 120V
68	34602.0000	-	1	Wiring Harness, Selector Switch (Single CW Only)
Models with ON/OFF Rocker Switch				
69	23331.0009	-	1	Wiring Harness, Main APS/TS 120V
70	23953.0003	1	-	Wiring Harness, Main 0/6 Twin 120/240V
71	23989.0004	1	-	Wiring Harness, Main Twin-APS 120/240V
	23989.0005	1	-	Wiring Harness, Main 2/2 Twin 120/240V
	23989.0006	1	-	Wiring Harness, Main 4/2 Twin 120/240V
72	28051.0001	-	1	Wiring Harness, Main APS/TC 240V
73	38920.0000	-	1	Wiring Harness, Switch to Terminal Block 240V
	38920.0002	(1)	-	Wiring Harness, Switch to Terminal Block 240V (1 Per Power Cord)
	38920.0004	-	1	Wiring Harness, Switch to Terminal Block 120V
74	34023.0004	2	-	Wiring Harness, Main 0/6 Twin (2 Power Cords)
75	34023.0005	-	1	Wiring Harness, Main (3 Lower Warmers) 120/240V
76	34023.0006	-	1	Wiring Harness, Main (1 Lower, 2 Top Warmers) 120/240V & Sngl CW-35
77	34023.0007	-	1	Wiring Harness, Main (1 Top, 3 Lower Warmers) 120/240V
Models with ON/OFF Toggle Switch				
78	41390.0009	-	1	WIRING HARN, Main CWTF -35 3 lwr
79	41390.0010	-	1	WIRING HARN, Main CWTF -20 3 lwr
80	41390.0011	-	1	WIRING HARN, Main CWTF -35 1 lwr/2 upr & SINGLE CWTF35 1 lwr
81	41390.0012	-	1	WIRING HARN, Main CWTF -35 3 lwr left
82	41390.0014	-	1	WIRING HARN, Main CWTF-20 1 lwr/2 upr
83	41390.0015	-	1	WIRING HARN, Main CWTF-35 TC
84	41390.0016	-	1	WIRING HARN, Main CWTF-20 TC/APS
85	41390.0017	-	1	WIRING HARN, Main CWTF-DV 1 lwr/2 upr
86	41390.0018	-	1	WIRING HARN, Main CWTF-DV 3 lwr

Continued on next page

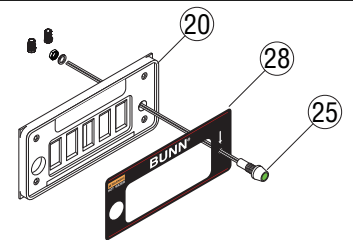
* Indicates the part number listed is for reference only.

BUNN®**C/CT/CWTF
Series**

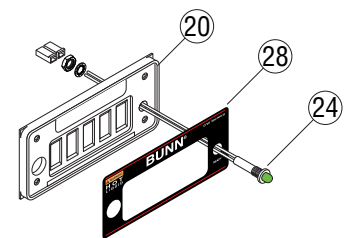
Early Twins w/One Cord



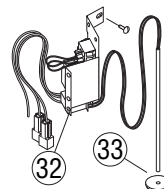
Brewers w/Switch Cover



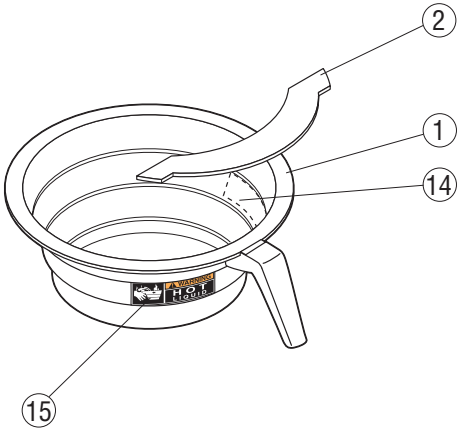
Brewers w/Fresh Timer



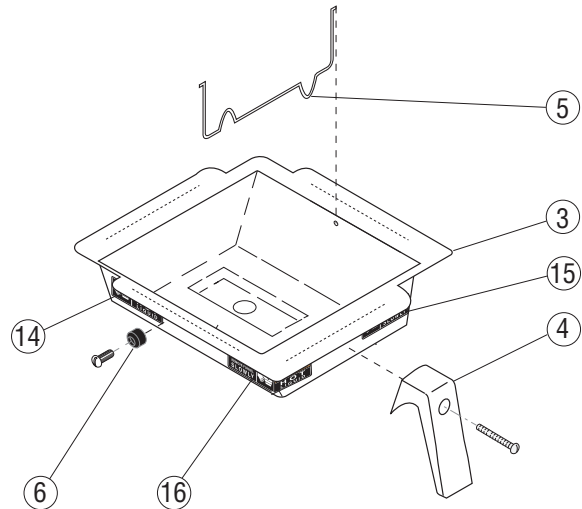
Brewers w/Ready Light

Electronic
Thermostat

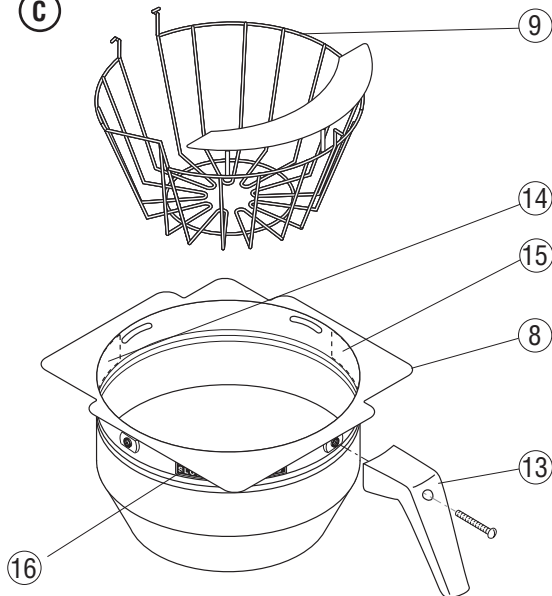
ITEM	PART NO.	QTY. TWIN	QTY. SINGLE	DESCRIPTION
87	41390.0019	-	1	WIRING HARN, Main CWTF-DV 1 lwr
88	41390.0020	-	1	WIRING HARN, Main CWTF-35 TS/APS
89	41390.0021	-	1	WIRING HARN, Main CWTF-20 TS/APS
90	41390.0022	-	1	WIRING HARN, Main CWTF – APS 230v CE
91	41390.0023	-	1	WIRING HARN, Main CW-20 APS
92	41390.0024	-	1	WIRING HARN, Main CWTF -DV TC/APS
93	41390.0028	-	1	WIRING HARN, Main CWTF35A 230V 3LOWER/1UPPER
94	34023.0009	2	-	Wiring Harness, Main 0/6 Twin (2 Power Cords)
95	40081.0003	2	-	Wiring Harness, Switch to Term Block 0/6 Twin (2 Power Cords)

A

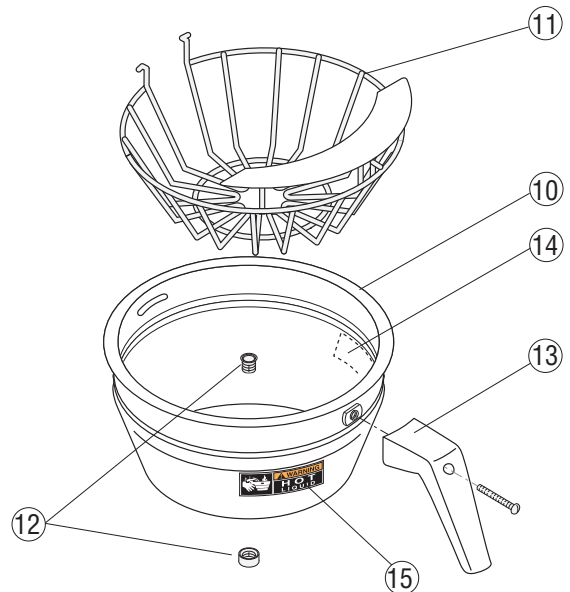
Plastic 'C' Funnel

B

Pouch Pack Funnel

C

SST Gourmet 'C' Funnel

D

SST 'C' Funnel

FUNNELS

ITEM	PART NO.	QTY. TWIN	QTY. SINGLE	DESCRIPTION
A	20583.0003	-	1	Funnel Assy, 7.125" Black Plastic (Includes items 2, 14, & 15)
	29351.0001	2	1	Funnel Assy, 7.625" Black Plastic (Includes items 2, 14, & 15)
	20583.0006	-	1	Funnel Assy, 7.125" Orange Plastic (Includes items 2, 14, & 15)
	1 33119.0000*	-	1	Funnel Body, 7.125" Black Plastic (Order item A)
	1 33127.0000*	-	1	Funnel Body, 7.125" Orange Plastic (Order item A)
	2 32964.0000	-	1	Splashgard, Black Plastic, 7.125"
2	32966.0000	2	1	Splashgard, Black Plastic, 7.625"
B	29151.0000	2	1	Funnel Assy, Pouch Pack Blk Handle (Includes items 3-6 & 14-16)
	29151.0001	2	1	Funnel Assy, Pouch Pack Orn Handle (Includes items 3-6 & 14-16)
	04274.0010	2	1	Funnel Assy, Pouch Pack Brown Plastic (Includes item 16)
	04274.0012	2	1	Funnel Assy, Pouch Pack Black Plastic (Includes item 16)
	3 29150.0000*	2	1	Funnel Body, Pouch Pack 'C Series' SST (Order item B)
	4 29152.1000	2	1	Handle Kit, Pouch Pack, Black (Includes mounting screw below)
	29152.1001	2	1	Handle Kit, Pouch Pack, Orange (Includes mounting screw below)
	01331.0002	2	1	Screw, Round Head 10-32 x 1.5"
	5 29845.0000	2	1	Insert, Pouch Pack Funnel
	6 35302.0000	2	1	Keeper, Insert
	01331.0000	2	1	Screw, Round Head 10-32 x .5"
C	34559.0000	-	1	Funnel Assy, Gourmet 7.125" SST (Includes items 8, 9, & 13-16)
	34559.0001	2	1	Funnel Assy, Gourmet 7.625" SST (Includes items 8, 9, & 13-16)
	8 34558.0000*	2	1	Funnel Body, Gourmet SST (Order item C)
	9 34546.0000	2	1	Filter Basket, Gourmet 'C'
D	20216.0000	-	1	Funnel Assy, 7.125" SST Blk Handle (Includes items 10, 11 & 13-16)
	20216.0001	-	1	Funnel Assy, 7.125" SST Orn Handle (Includes items 10, 11 & 13-16)
	20217.0000	2	1	Funnel Assy, 7.625" SST Blk Handle (Includes items 10, 11 & 13-16)
	20217.0001	2	1	Funnel Assy, 7.625" SST Orn Handle (Includes items 10, 11 & 13-16)
	10 28553.0000	-	1	Funnel Body, W/Decals, 7.125" SST (Includes items 14 & 15)
	28554.0000	2	1	Funnel Body, W/Decals, 7.625" SST (Includes items 14 & 15)
	11 33088.0000	-	1	Filter Basket, 7.125" SST
	33090.0000	2	1	Filter Basket, 7.625" SST
	12 01031.0000	2	1	Funnel Tip Kit
	13 20244.1000	2	1	Handle Kit, Black (Includes mounting screw below)
	20244.1001	2	1	Handle Kit, Orange (Includes mounting screw below)
	01331.0002	2	1	Screw, Round Head 10-32 x 1.5"
	14 03408.0002	2	1	Decal, Warning - Remove Funnel
	15 03409.0002	2	1	Decal, Warning - Hot Liquid
	16 28694.0000	2	1	Decal, Warning - Hot Liquid/Remove Funnel

D does not include tip kit


Note

NUMERICAL INDEX

PART NO.	PAGE NO.	PART NO.	PAGE NO.	PART NO.	PAGE NO.	PART NO.	PAGE NO.
00310.0000.....	31,33,35	01116.0000.....	37	02332.0002.....	17,19	10836.0000.....	13
00310.0002.....	35	01148.0000.....	35	02337.0001.....	43	10836.0005.....	13
00400.0001.....	21	01148.0001.....	35	02371.0000.....	9	10836.0009.....	13
00402.0001.....	25,37	01154.0000.....	29,33,35	02722.0000.....	5	10836.0010.....	13
00419.0000.....	25	01155.0000.....	29,33,35	02722.0001.....	5	10836.0011.....	13
00425.1000.....	25	01200.0000.....	25	02732.0000.....	5	10847.0000.....	13
00436.0001.....	27	01201.0000.....	25	02763.0000.....	5	10867.0000.....	13
00445.0001.....	35	01212.0000.....	25	02765.0000.....	5	11408.1002.....	13
00459.0000.....	27,29,33	01212.0001.....	25	02822.0000.....	13	11408.1005.....	13
00459.0001.....	31	01227.0000.....	41	02858.0000.....	39	11408.1006.....	13
00462.0001.....	9	01303.0000.....	5,9,41	02999.0000.....	5	11424.0000.....	25
00463.0000.....	27,29	01303.0002.....	5	03070.1001.....	21	11431.0002.....	21
00463.0000.....	31,33	01308.0000.....	43	03263.0002.....	9	11438.0000.....	41
00484.0001.....	35	01308.0002.....	15,43	03408.0002.....	53	11438.0001.....	41
00511.1000.....	19	01308.0003.....	15	03409.0002.....	53	11440.0005.....	41
00606.0000.....	43	01309.0000.....	43	03628.0000.....	43	11440.0008.....	41
00656.0000.....	13	01315.0000.....	5,9	03652.0000.....	41	11440.0009.....	41
00658.0000.....	13	01315.0000.....	13,21	03656.0000.....	41	11440.0010.....	41
00669.0003.....	13	01315.0005.....	13	03851.0000.....	45	11440.0011.....	41
00670.0000.....	9	01317.0000.....	43	03993.0000.....	19	11442.0000.....	41
00720.0000.....	45	01317.0004.....	45	03996.0000.....	19	11707.0003.....	25
00754.0001.....	17	01319.0000.....	5	04118.0000.....	21	11707.1000.....	25
00824.0000.....	43	01320.0000.....	47	04119.0000.....	23	11707.1001.....	25
00824.0001.....	43	01326.0007.....	5,7	04133.0000.....	23	11707.1002.....	25
00831.0000.....	13	01327.0000.....	37	04221.0000.....	21	12104.0000.....	15
00833.0000.....	5	01327.0000.....	43	04236.1000.....	21	12148.0000.....	43
00908.0000.....	5,21	01331.0000.....	53	04243.0000.....	45	12183.0002.....	13
00912.0000.....	5,9,21	01331.0002.....	53	04260.0000.....	21	12364.0000.....	17
00916.0000.....	5,9,41	01347.0000.....	7,19	04270.0000.....	25	12364.0000.....	7
00942.0000.....	21	01382.0000.....	13	04270.0002.....	25	12422.0000.....	25
00943.0000.....	21	01382.0002.....	13	04274.0010.....	53	12422.0001.....	37
00970.0000.....	11,41	01426.0000.....	25	04274.0012.....	53	12517.0003.....	45
00971.0000.....	5,7	01502.0000.....	37	04314.0001.....	45	12570.0000.....	45
00973.0000.....	43	01510.0000.....	43	04572.0000.....	35	12667.0001.....	17
00973.0000.....	9	01532.0000.....	27,29,31	04636.1000.....	21	12683.0000.....	9
00988.0000.....	11	01532.0000.....	33,39	04637.1000.....	21	12683.0002.....	9
01031.0000.....	53	01590.0000.....	43	04776.0000.....	23	12687.0000.....	21
01063.0000.....	45	01592.0000.....	5,17	04828.0001.....	41	12688.0000.....	21
01075.0000.....	21	01592.0001.....	5	04828.1001.....	41	12689.1000.....	21
01079.0000.....	37	01593.0000.....	17	04831.0000.....	5	12698.0003.....	43
01082.0000.....	23	01685.0000.....	43	05212.0000.....	41	12698.0004.....	43
01082.0004.....	23	01686.0000.....	43	05515.0000.....	21	12698.0005.....	43
01082.0005.....	23	01719.1000.....	47	05518.0000.....	21	12908.0000.....	35
01082.0007.....	23	01925.1000.....	21	05746.0000.....	43	12909.0000.....	35
01082.1000.....	23	01927.0000.....	21	07038.0000.....	43	12913.0000.....	25
01085.0000.....	37	01951.0000.....	41	07073.0001.....	45	12914.0002.....	25
01085.0002.....	37	01951.0001.....	41	07073.0003.....	45	12915.0000.....	39
01100.0000.....	37	01975.0000.....	37	07441.0000.....	37	12920.0000.....	45
01101.0000.....	37	02301.0000.....	43	10165.0000.....	15	12920.0002.....	45
01106.0000.....	43	02308.0000.....	9,11,13	10447.0000.....	15	12921.0000.....	17,45
01106.0001.....	43	02308.0000.....	17,19,37	10693.0000.....	13	12928.0000.....	25
01106.0003.....	43	02308.0000.....	43,45,47	10693.0001.....	13	12978.0000.....	5
01111.0000.....	37	02332.0001.....	43	10693.0002.....	13	12981.0001.....	5
01111.0002.....	37	02332.0002.....	5,11	10736.0000.....	13	12984.0002.....	45

NUMERICAL INDEX

12984.0004.....	45	21016.0011.....	41	23267.1001.....	13	24254.0001.....	7
12985.0000.....	47	21016.0012.....	41	23270.0000.....	11	24254.0002.....	7
12985.0003.....	47	21016.0027.....	41	23294.0000.....	11	24356.0222.....	33
13042.0001.....	41	21104.0003.....	19	23294.0001.....	11	24393.0000.....	35
13053.0000.....	39	21180.0000.....	37	23294.0002.....	11	24394.0222.....	33
13054.0000.....	39	21181.0000.....	37	23294.0008.....	11	24540.0000.....	15
13055.0000.....	39	21812.0002.....	35	23294.0011.....	11	24600.0000.....	17
13056.0000.....	39	21812.1006.....	35	23294.1010.....	11	24684.0000.....	29
13057.0000.....	39	21814.0011.....	29	23320.1004.....	11	24785.0002.....	41
13058.0000.....	39	21814.0016.....	31,33	23320.1012.....	11	24805.0000.....	17
13059.0000.....	39	22012.0002.....	43	23321.0000.....	17	24805.0002.....	17
13060.0000.....	39	22249.0000.....	29,33,35	23321.0001.....	17	25102.0000.....	43
13061.0000.....	39	22289.0000.....	45	23321.0002.....	17	25102.0001.....	43
13110.0000.....	5	22289.0001.....	45	23321.0003.....	17	25137.0000.....	17
13255.0005.....	19	22289.0002.....	45	23321.0004.....	17	25137.0001.....	17
13350.0006.....	9	22289.0003.....	45	23329.0000.....	19	25158.0000.....	21
13350.0008.....	9	22289.0005.....	45	23331.0002.....	47	25158.0001.....	21
13350.0011.....	9	22289.0006.....	45	23331.0009.....	49	25158.0002.....	21
13350.0016.....	9	22289.0012.....	45	23413.0000.....	27,29	25158.0004.....	21
13352.0008.....	43	22289.0013.....	45	23522.0001.....	43	25292.0000.....	45
13352.0011.....	43	22295.0000.....	45	23696.0000.....	43	25319.1000.....	23
13354.0000.....	9	22295.0001.....	45	23697.0000.....	43	25319.1001.....	23
20201.0750.....	21	22295.0002.....	45	23698.1000.....	17	25319.1002.....	23
20201.3000.....	21	22295.0003.....	45	23698.1001.....	17	25319.1010.....	23
20211.0100.....	21,23	22295.0004.....	45	23721.0000.....	29,33,35	25320.1000.....	23
20216.0000.....	53	22295.0005.....	45	23768.0000.....	21	25320.1001.....	23
20216.0001.....	53	22295.0006.....	45	23769.0000.....	21	25320.1002.....	23
20217.0000.....	53	22295.0007.....	45	23799.0001.....	47	25320.1007.....	23
20217.0001.....	53	22295.0010.....	45	23819.0000.....	35	25320.1012.....	23
20244.1000.....	53	22295.0011.....	45	23820.1000.....	35	25320.1017.....	23
20244.1001.....	53	22295.0012.....	45	23924.0000.....	29	25326.0000.....	47
20526.1222.....	29,33,35	22300.0222.....	29,33,35	23925.0000.....	29	25326.0001.....	47
20527.0001.....	35	22306.0000.....	17	23929.1000.....	21	25328.0001.....	47
20528.1222.....	35	22312.0000.....	29,33,35	23930.1000.....	21	25329.0000.....	47
20577.0001.....	29,31,33	22312.0001.....	35	23953.0000.....	47	25329.0002.....	47
20583.0003.....	53	22397.0001.....	25,37	23953.0003.....	49	25347.0000.....	47
20583.0006.....	53	22730.1002.....	13	23989.0000.....	47	25351.0000.....	17
20603.0001.....	45	22730.1003.....	13	23989.0001.....	47	25351.0001.....	17
20637.0000.....	45	22730.1005.....	13	23989.0004.....	49	25351.0002.....	17
20690.0000.....	31,33,35	22730.1007.....	13	23989.0005.....	49	25352.0007.....	11
20691.0000.....	39	22730.1009.....	13	23989.0006.....	49	25633.0002.....	5
20691.0001.....	39	22733.0000.....	11	23990.0000.....	47	25657.0000.....	17
20762.0000.....	45	22740.0000.....	17	23990.0001.....	47	25657.0001.....	17
20782.1000.....	35	22748.0000.....	11	24204.0000.....	47	25657.0002.....	17
20783.0000.....	35	22748.0001.....	11	24213.0000.....	15	25658.0000.....	17
20784.0000.....	35	22748.0002.....	11	24217.1000.....	21	25658.0002.....	17
20785.0000.....	35	22918.0000.....	23	24220.0000.....	29	25864.0000.....	7
20786.1000.....	35	22918.0001.....	23	24230.0000.....	19	25907.0000.....	47
20941.1000.....	21	22999.0000.....	17	24249.0003.....	13	25907.0001.....	47
20976.0006.....	37	23232.0000.....	9	24253.0000.....	19	26216.0000.....	33
20976.1000.....	37	23232.0002.....	9	24253.0001.....	19	26217.0000.....	33
20976.1001.....	37	23232.0004.....	9	24253.0002.....	19	26225.0000.....	15
20976.1002.....	37	23232.0005.....	9	24253.0003.....	19	26283.1000.....	13
21002.9000.....	47	23267.1000.....	13	24254.0000.....	7	26283.1001.....	13

NUMERICAL INDEX

PART NO.	PAGE NO.	PART NO.	PAGE NO.	PART NO.	PAGE NO.	PART NO.	PAGE NO.
26285.0000.....	11	28479.0000.....	37	34061.1006.....	11	41256.0000.....	37
26285.0001.....	11	28480.0000.....	37	34061.1022.....	11	41257.0000.....	31
26285.0002.....	11	28481.0000.....	37	34061.1023.....	11	41267.0000.....	27
26285.0006.....	11	28526.0021.....	25	34061.1025.....	11	41268.0000.....	27
26285.0007.....	11	28526.1000.....	25	34061.1035.....	11	41281.0000.....	27,29
26285.0008.....	11	28526.1001.....	25	34065.1001.....	19	41390.0009.....	49
26287.0000.....	11	28526.1002.....	25	34111.0000.....	49	41390.0010.....	49
26301.0000.....	29	28526.1003.....	25	34130.0000.....	45	41390.0011.....	49
26318.0000.....	29	28553.0000.....	53	34208.1002.....	11	41390.0012.....	49
26413.0000.....	17	28554.0000.....	53	34208.1011.....	11	41390.0014.....	49
26413.0001.....	17	28694.0000.....	53	34546.0000.....	53	41390.0015.....	49
26443.0000.....	37	29150.0000.....	53	34558.0000.....	53	41390.0016.....	49
26527.1000.....	45	29151.0000.....	53	34559.0000.....	53	41390.0017.....	49
26528.0001.....	19	29151.0001.....	53	34559.0001.....	53	41390.0018.....	49
26953.0000.....	17	29152.1000.....	53	34602.0000.....	49	41390.0019.....	51
27018.0000.....	47	29152.1001.....	53	34955.0000.....	13	41390.0020.....	51
27429.0000.....	43	29329.1000.....	21	34955.0001.....	13	41390.0021.....	51
27429.0002.....	43	29351.0001.....	53	34955.0002.....	13	41390.0022.....	51
27514.0000.....	25	29445.1000.....	47	34955.0003.....	13	41390.0023.....	51
27623.0000.....	19	29845.0000.....	53	34981.0001.....	49	41390.0024.....	51
27691.0001.....	45	32063.0000.....	25	35129.0000.....	39	41390.0028.....	51
27693.0000.....	13	32283.0000.....	37	35302.0000.....	53	41402.1000.....	11
27705.0000.....	43	32400.0000.....	47	35712.0000.....	17	41402.1001.....	11
27727.0000.....	45	32400.0001.....	47	36256.0000.....	47	41402.1003.....	11
27728.0011.....	47	32530.0001.....	47	37297.0002.....	37	41402.1008.....	11
27904.0000.....	45	32540.0000.....	13	37711.0000.....	47	41405.0000.....	15
27929.0000.....	13	32832.0000.....	47	37711.0001.....	47	41417.1000.....	11
27946.0000.....	49	32964.0000.....	53	37881.0000.....	5,7,13	41417.1001.....	11
28004.0000.....	43	32966.0000.....	53	37881.0002.....	5,7	41417.1002.....	11
28005.0000.....	37	33088.0000.....	53	38326.0000.....	47	41426.1000.....	11
28010.0000.....	45	33090.0000.....	53	38326.0001.....	47	41427.0000.....	15
28010.0001.....	45	33119.0000.....	53	38496.1000.....	5	41760.0000.....	5,7
28010.0002.....	45	33127.0000.....	53	38496.1002.....	5	41935.0000.....	37
28010.0003.....	45	33529.0002.....	47	38498.1000.....	5,7	41935.0001.....	37
28010.0004.....	45	33637.0000.....	29	38503.1000.....	5	42025.0000.....	37
28010.0005.....	45	33643.0000.....	27,29	38504.1000.....	5	42025.0001.....	37
28020.0000.....	37	33985.0000.....	49	38707.1000.....	7		
28021.0000.....	37	34005.0000.....	49	38707.1001.....	7		
28051.0000.....	49	34023.0000.....	49	38707.1002.....	7		
28051.0001.....	49	34023.0002.....	49	38707.1003.....	7		
28111.0007.....	47	34023.0004.....	49	38820.0000.....	15		
28173.0000.....	23	34023.0005.....	49	38894.0001.....	43		
28174.0000.....	23	34023.0006.....	49	38920.0000.....	49		
28175.0000.....	47	34023.0007.....	49	38920.0002.....	49		
28176.0000.....	43	34023.0008.....	49	38920.0004.....	49		
28177.0000.....	45	34023.0009.....	51	39806.0000.....	15		
28179.0000.....	45	34026.0002.....	49	40081.0003.....	51		
28180.0000.....	5	34026.0003.....	49	40085.1000.....	5		
28181.0000.....	13	34056.0000.....	47	40124.0000.....	15		
28181.0001.....	13	34061.0013.....	11	40763.0001.....	43		
28181.0002.....	13	34061.0026.....	11	41252.0000.....	31,33		
28233.0000.....	11	34061.1000.....	11	41254.0000.....	31		
28242.0000.....	23	34061.1003.....	11	41255.0002.....	37		
28319.0000.....	45	34061.1004.....	11	41255.0003.....	37		

NAVSEA/SPAWAR TECHNICAL MANUAL DEFICIENCY/EVALUATION REPORT (TMDER)

INSTRUCTIONS: Continue on 8 ½" x 11" page if additional space is needed.

1. Use this report to indicate deficiencies, problems and recommendations relating to publications.
2. For CLASSIFIED TMDERs see OPNAVINST 5510H for mailing requirements.
3. For TMDERs that affect more than one publication, submit a separate TMDER for each.
4. Submit TMDERs at web site <https://nsdsa.nmci.navy.mil> or mail to: **COMMANDER, CODE 310 TMDERs, NAVSURFWARCENDIV NSDSA, 4363 MISSILE WAY BLDG 1389, PORT HUENEME CA 93043-4307**

1. PUBLICATION NUMBER	2. VOL/PART	3. REV/DATE OR CHG/DATE	4. SYSTEM/EQUIPMENT ID	
5. TITLE OF PUBLICATION			6. REPORT CONTROL NUMBER (6 digit UIC-YY-any four: xxxxxx-03-xxxx)	
7. RECOMMEND CHANGES TO PUBLICATION				
7a. Page #	7b. Para #	7c. RECOMMENDED CHANGES AND REASONS		
8. ORIGINATOR'S NAME AND WORK CENTER		9. DATE	10. ORIGINATOR'S E-MAIL ADDRESS	11. TMMA of Manual (NSDSA will complete)
12. SHIP OR ACTIVITY Name and Address (Include UIC/CAGE/HULL)		13. Phone Numbers: Commercial () - DSN - FAX () -		

FOLD HERE AND TAPE SECURELY
PLEASE DO NOT STAPLE

INCLUDE COMPLETE ADDRESS

USE
PROPER
POSTAGE

FOR OFFICIAL USE ONLY

**COMMANDER
CODE 310 TMDERs
NAVSURFWARCENDIV NSDSA
4363 MISSILE WAY BLDG 1389
PORT HUENEME CA 93043-4307**

FOLD HERE AND TAPE SECURELY
PLEASE DO NOT STAPLE

NAVSEA/SPAWAR TECHNICAL MANUAL DEFICIENCY/EVALUATION REPORT (TMDER)

INSTRUCTIONS: Continue on 8 ½" x 11" page if additional space is needed.

1. Use this report to indicate deficiencies, problems and recommendations relating to publications.
2. For CLASSIFIED TMDERs see OPNAVINST 5510H for mailing requirements.
3. For TMDERs that affect more than one publication, submit a separate TMDER for each.
4. Submit TMDERs at web site <https://nsdsa.nmci.navy.mil> or mail to: **COMMANDER, CODE 310 TMDERs, NAVSURFWARCENDIV NSDSA, 4363 MISSILE WAY BLDG 1389, PORT HUENEME CA 93043-4307**

1. PUBLICATION NUMBER	2. VOL/PART	3. REV/DATE OR CHG/DATE	4. SYSTEM/EQUIPMENT ID	
5. TITLE OF PUBLICATION			6. REPORT CONTROL NUMBER (6 digit UIC-YY-any four: xxxxxx-03-xxxx)	
7. RECOMMEND CHANGES TO PUBLICATION				
7a. Page #	7b. Para #	7c. RECOMMENDED CHANGES AND REASONS		
8. ORIGINATOR'S NAME AND WORK CENTER		9. DATE	10. ORIGINATOR'S E-MAIL ADDRESS	11. TMMA of Manual (NSDSA will complete)
12. SHIP OR ACTIVITY Name and Address (Include UIC/CAGE/HULL)		13. Phone Numbers: Commercial () - DSN - FAX () -		

FOLD HERE AND TAPE SECURELY
PLEASE DO NOT STAPLE

INCLUDE COMPLETE ADDRESS

USE
PROPER
POSTAGE

FOR OFFICIAL USE ONLY

**COMMANDER
CODE 310 TMDERs
NAVSURFWARCENDIV NSDSA
4363 MISSILE WAY BLDG 1389
PORT HUENEME CA 93043-4307**

FOLD HERE AND TAPE SECURELY
PLEASE DO NOT STAPLE

S6163-AK-FSE-010
